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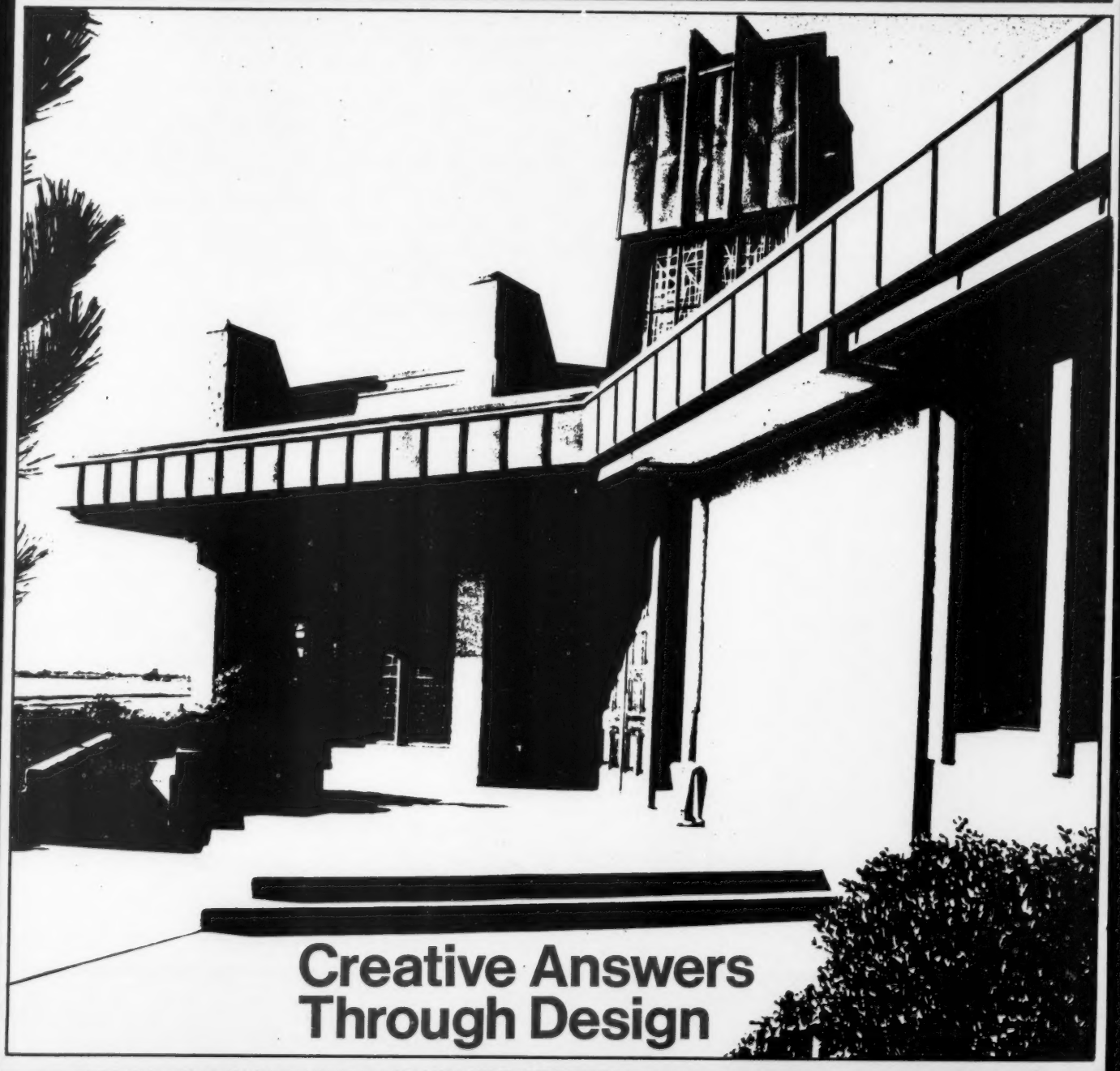
AIR FORCE engineering & services QUARTERLY



Creative Answers Through Design

From the Director

Image: Perceptions and Results

As I think about where we are and what our future direction should be in Engineering and Services, one thought clearly comes to mind. Critical to the present and future success of engineers, architects and services personnel is their **image.** Image is based upon the **perceptions** of the people we serve, work with and for, and more importantly, the results we achieve.

In order to improve our image, we must plan our future progress with clear goals in mind. We must design, construct, maintain, repair and operate with emphasis on:

- **Energy effectiveness;**
- **Productivity;**
- **Maintainability;**
- **Economy—"the most for the buck;"** and
- **People and their quality of life.**

More specifically, let me mention a few areas that we all need to concentrate on which will, in the long run, improve our image:

- We need to examine the needs, wants and interests of the customer we are serving and the groups we are trying to reach or the service we are providing.
- We must look at design improvement as not an end in itself but as a means to achieving other related goals in energy, quality of life and productivity.
- In writing specifications for design services, we need to allow enough freedom for the designer to bring his full creative power to bear on the problem or project.
- We need to work on decreasing the number of policies and procedures that work against us and impair our design and construction progress.
- Make the **best a standard.** Enough attention is focused on the bad and ugly. Concentrate instead on the exemplar performance and have your organization move toward that goal.
- Once constructed, we must accept the challenge of providing **timely** and **cost effective** maintenance to insure that our facilities continue to provide support throughout their serviceable life.

Only if we keep our image strong will we be able to 'serve' our community, society and military service with our best efforts. We must not only speak these words but **demonstrate them.** The perception must be clear—only through performance will the results be there. We must **not only work harder but smarter:**

- **With care for people uppermost in our mind;**
- **With innovation;**
- **With diplomacy;**
- **With purpose;** and
- **With a high degree of enthusiasm and energy.**

In line then with these traits and exemplar performance come recognition and reward.

William D. Gilbert

WILLIAM D. GILBERT
Major General, USAF
Director of Engineering and Services

AFRP 85-1 VOL 20 NO 2 MAY 1979

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AIR FORCE ARCHITECTURE: Creative Answers Through Design

The door may not be entirely open, but it is ajar for architects to play a significant role in the shaping of Air Force environs. Architects are being challenged as never before.

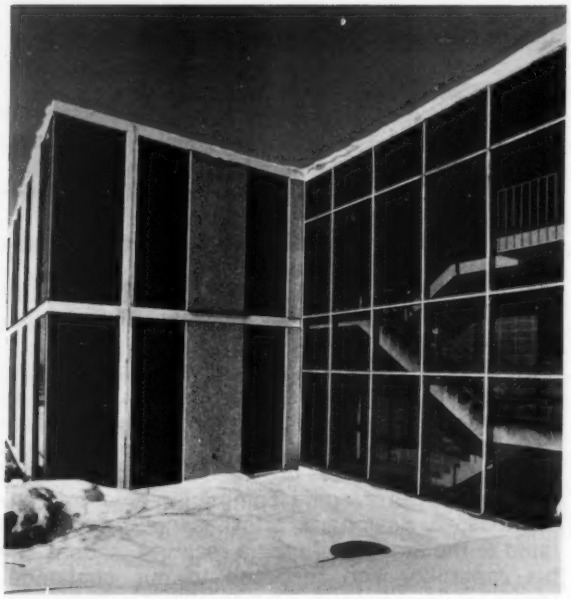
by Col Sydney E. Key, RA (RET)

Editor's Note: The following article served as the basis of a talk presented by the author early last fall during graduation exercises of the Architectural Planning Course at the School of Civil Engineering, Air Force Institute of Technology, Wright-Patterson AFB, Ohio. Colonel Key has since retired, completing over 31 years of active duty service.

Over the years, we in the Air Force have been trying to achieve better design and more livable facilities within our Air Force environment. To relate the problems we've encountered would fill a book, but we've seen reasonably steady progress, however drudgingly slow. In the past few years, there has been a greater awakening, and acceptance of, the need to create a better working, living and recreational environment on our Air Force installations. The emergence of Air Force programs and policies along this line has quickened the pace tremendously. Architects in the Air Force are being challenged as never before.

Opportunity

It has been my experience that military architects in the Air Force were considered extremely fortunate if they held a position that allowed them to practice architecture in any form—and although that is still true in many cases, there is still a great need for architectural talent in today's Air Force. I've found that if your present



Exposed aggregate panels and windows are featured in this Air Force facility.

Clean and crisp design features in this building add to the overall look of a base.

job gives you little opportunity, the next one generally will. The door may not be entirely open, but it is ajar for you to play a significant role in the shaping of Air Force environs. You have an opportunity to make more major contributions than ever before in terms of our constructed facilities.

Responsibility

But along with that opportunity goes responsibility, a responsibility to use your training and experience to positively shape our environment. Whether you are working in O&M, design, construction or environmental planning, the opportunity is there. The problem most of us face is that often the daily "brush fires" consume so much time that it becomes extremely difficult to find time to do creative thinking or to use our imagination to creatively solve whatever architectural problems we face. But take time to think of ways to improve the base you are on. Manage your time to give the Air Force the benefit of your creative ability. Then, sell your ideas to mid-level and upper level management instead of sitting around and waiting for the bell to ring. There's room for imagination and creative ability regardless of your position or workload. If you find yourself working somewhere other than design and construction, you still have an excellent opportunity to see things that should be done to improve the visible side of the installation. Develop and sell these ideas. Commanders are extremely receptive to good ideas. You may not have the satisfaction of doing the design in this case, but the **idea** was yours. You have contributed professionally.

AFRCE: Design by Contract

I'm sure most of you view the Air Force Regional Civil Engineer (AFRCE) as a place where such a challenge is easiest to accept because design and construction is of such large volume. I will agree that within the Air Force we are more involved in architectural design than any other Air Force organization, but because of the volume, it is still a great challenge to obtain excellence in design in all our projects. To provide you some insight to our approach, let's dwell on the AFRCE for a moment.

Since all our projects are designed by contract, we see the architect-engineer (A-E) selection process as being an integral step toward achieving outstanding architectural design. We believe the old saying that great architects will only occasionally produce mediocre buildings, but mediocre architects almost never produce great buildings. Assuming that our architectural and engineering selection process works as it should, we see the interaction between the architect and client as an important influence toward good design. The Air Force or client must clearly articulate the needs and purposes which our facilities are to serve. Then, we must be willing to permit, or even demand, the architects perform professionally and thereby take full advantage of their design talents. We currently have under contract some of the most talented architectural designers in the country. We strongly emphasize to the architec-

tural and engineering firms that the Air Force will accept nothing less than their best creative effort and we require imaginative, yet cost effective, solutions to our design problems.

Federal Design

Let me read a quote from a government publication called **The Design Necessity** which came out of the first Federal Design Assembly held in Washington DC back in May 1972: "Nowhere is design more necessary than the Federal government, the nation's largest client for design in visual communications, interiors, industrial design, architecture, and in the landscaped environment. Yet Federal design, like corporate design of 20 years ago, is often mistaken as a luxury. There are easily understood reasons for this misconception. A responsible government has to defend whatever it does on all fronts, and the handiest defense is quantification. It is easy to suppose that we cannot afford what we cannot measure. Easy, but invalid. Some design achievement—more than one might think—can be measured: But even where it cannot be, the results of good design are measurable."

In recent years, the Air Force began to recognize the worth of good architectural design since it vitally affects the general livability and usefulness of all our facilities. Perhaps, a definition of what is meant by good architectural design should be addressed.

Architecture

Architecture is more than pretty pictures, sticks and stones or plans. It is a reflection of function, activities and aesthetic qualities unique to man. In this highly complex and specialized society in which we live, work and play, organized shelter is achieved only through a cooperative effort of many individuals working together and understanding quantatively and qualitatively what is expected of them. Communication between the users, the architects, engineers, management, etc., is essential and teamwork between all these individuals is necessary to achieve good architectural design. It's interesting to note over the years how many poorly designed buildings never seem to fully satisfy user requirements and are therefore programmed for replacement. In contrast, well designed buildings of 50 years ago are continually upgraded with no thought of replacement. We have departed from the old attitude that visual design items are cosmetic in nature and expensive. We now consider the functional and visual aspects of design essential. We feel it can do a lot to save money over the life of our structures. Yes, it can even extend the life of our structures. But where we can't measure a monetary savings, we know that a well designed living or working environment has a definite positive impact on the morale, productivity and eventual readiness of Air Force personnel.

Architectural Excellence

The achievement of excellence in architectural design remains a prime goal for all our projects. But simply setting a goal doesn't insure success. Translating high design standards into architectural reality requires two things:

- **A clear understanding of the process necessary to obtain this goal;** and
- **A strong commitment to architectural quality by all of us who will be actively involved in this process.**

Nothing sells an idea better than an existing example. One of the best examples would have to be our on-going commissary construction program. This major effort, which is over two years old in the AFRCE, has provided some pretty solid evidence to alter some commonly held misconceptions. A designer's effort is not directly related to the amount of fee he receives, rather, it's his capability and response to our challenge. When you commission a professional to help you, you have a right to expect quality professional work, and the professional should be proud of his accomplishments when he has developed an effective solution to the challenge you have presented. This is why the A-E selection process must be conducted professionally to provide us the best possible architectural talent available. We have also shown that innovative and imaginative design can occur even when the using agency has a fairly rigid definitive floor plan. A major contribution toward this success was having two project managers with expertise, enthusiasm and authority to engage in continuing dialogue with the A-E on design matters and to be able to give and take. Also, we were extremely fortunate to have an open-minded client, the Air Force Commissary Service, willing to accept professional design expertise.

Salesmanship

A client who will listen is generally the result of salesmanship. Any of you who have had private architectural experience realize that an architect must be a salesman and a designer. The most successful designers are superb salesmen. It does little good to develop an outstanding design if no one will agree to build what you have designed. This is especially true in the Air Force where some of the old ideas concerning costs versus good design continue to persist.

Now, if you're going to sell your ideas or designs, then they must be worthy of selling. Some of the actions we've taken in the Central Region to assure a worthy product are:

- **Continuance of work toward improving A-E selections.** This means letting all members of the

selection board know our objectives and insisting on all board members giving their best talents to the selection process.

- **Establishment of the predesign conference at the base as the first,** and probably most important time to influence good design by properly motivating the architect, and to start selling our ideas as professionals.
- **Publication of an AFRCE Central Region Design Excellence Brochure to aid our project managers and to motivate the contract architects.**

Also, we are building a slide library. We have slides of the 1976 and 1977 Air Force Design Award winning projects and other examples of Air Force architecture which we use at predesign conferences. The idea is to show our new architectural firms the improvement in quality of design that we are getting as well as examples of mediocre design as a method of motivating and challenging them to produce outstanding designs. Of course, the efforts we are making today won't be visible for one to two years.

We have vigorously pursued the Air Force Design Awards program. The purpose of this program is to recognize the achievement of excellence in architectural design. It also publicizes the results of efforts toward creating an outstanding environment at our bases. We believe it helps in our objective toward architectural design excellence.

We have used this program to our advantage. Many architectural engineering firms have been made aware of this program, and we have challenged them to win an award. The AFRCE has presented winners with award certificates with arranged publicity in the local area. We have also contacted a number of architects to advise their designs had been nominated and their reaction was good. We also canvassed major commands to assure certain well designed facilities would be nominated. Support of this program is required and can only result in improving the design excellence of our facilities. It takes extra effort to achieve.

Interior Design Program

One of our best examples of extra effort in the Central Region has been in implementing an interior design program. Good design requires a proper balance of all engineering and design disciplines. Neglect of essential design elements, such as interior design, can result in bleak, harsh facilities which have an unfavorable effect on morale and personnel efficiency.

The interior design effort is perhaps a major contribution that can be made at base level to existing buildings. The ingenuity and professional application of interior design to older buildings at many bases is refreshing and it is rewarding to see the contributions many of you have made. The attitudes and performance of those who work in these spaces is obviously so much better. (Editor's Note: A detailed discussion of the Central Region AFRCE's current Interior Design Program appears elsewhere in this issue.)

COLONEL KEY *had been the Regional Civil Engineer, Central Region, Dallas, Texas, from January 1973 until his retirement on 1 November 1978. He is a graduate of Texas Tech University with a bachelor's degree in architecture, and is a Registered Architect in Texas. He was a command pilot. On the occasion of his retirement, he received an honorary membership in the American Institute of Architects.*

Conclusion

There is reason to assume that a major concern within the Department of Defense in the next decade will continue to be the overall morale of the airmen and the quality of life provided. Our facilities are a major contribution. We know that neglecting essential design elements results in facilities which have an unfavorable effect on morale and personal efficiency. The achievement of excellence in architectural design is a prime goal. I challenge each of you to think seriously about how you in your particular job can go about translating high design standards into architectural reality. Develop a clear understanding of the process necessary to obtain your goal. Develop an implementation strategy for each of your design proposals. You must be a good salesman, as well as a good designer. You must be a strong proponent for the Air Force's commitment to quality architecture.

There is no substitute for imagination, initiative and ingenuity to the successful architect. If we, as architects, don't create our environment by design, it will happen by accident.

C&S

A Study of the Architect and Architecture: How to Improve Both

The base architect is a key person in the Air Force's endeavor to improve the quality of military life.

by Lt Col David G. Scheatzle, RA, PE

The overall architectural character of most of our Air Force bases is typified by utilitarian, functional design. This is in keeping with our military role—we must be flexible, and spend as much of our resources as possible on readiness. We need efficient facilities in terms of function, maintenance, energy and space. However, this does not preclude the fact that our buildings should be designed as pleasant places in which to work, visit and live. Our structures have tended to emphasize engineering rather than architecture. The consideration for people has frequently been lacking.

Base Architectural Character

The first reaction of those of us who are directly responsible for the design of Air Force bases might be that architects aren't doing their jobs. This is an erroneous presumption. Let's consider the development of the architectural character of a typical base.

Many designers have contributed to the base's appearance. Civilian architect-engineer (A-E) firms have designed many projects which have contributed various architectural styles to the base. The base architect, where there is one, has also left his mark by designing contracts which modified World War II, Korean War and other structures. The O&M Work Order planners designed small but numerous in-house projects. Lastly, the anonymous designers of self-help and other interior upgrade projects have added their various touches.

With so many designers who have each contributed their unique styles, it is no wonder that there is a problem with a consistent architectural character. We should not only strive to employ a good Air Force architect at each base, but we need to manage our projects consistently by first developing and then adding to the base's architectural character.

The Architectural Design Problem

It is clear that one underlying cause of our architectural problem is a lack of resources. At many bases, manpower situations did not provide the architectural positions to handle the entire workload. Also, the budget is usually small. Therefore, only the most austere building envelope is provided. For this reason, it is most important that we employ the finest talent we can get, manage the architectural design work as efficiently as possible, and educate Air Force designers in the latest methods and materials so that they can use the scarce dollars to the maximum benefit.

Let us look at the Air Force design problem in terms of:

- **The Air Force architect (military or civilian) and his position,** and
- **The management of the Air Force Design Problem.**

Architect Population

First, consider the Air Force architect population distribution. At this time, the officers and civilians with an architect or architect-engineering degree are functionally distributed as shown in **Figure 1.** This shows a total of over 300 trained architects working in the Civil Engineering career field.

From the totals shown in **Figure 1,** it would seem that architects are well represented in the career field. Certainly, the intensive procurement of officer architects, which started in the mid-1960s, is paying some dividends. These officers are advancing to the higher management levels—positions where they can influence the proper application of architecture. However, we are not as fortunate at the working level. At one major command, 40 percent of the bases do not have a graduate architect assigned to an architectural position.

The average military architect only practices in the profession for a few years, then various management assignments dominate his career. Therefore, if we are to have continuity and long-range architectural programs at the base, we must rely on the civilian Air Force architects. Our civilian architects must be treated as the backbone of the base architectural talent. But, as can be seen from **Figure 1,** we employ only 85 civilian architects at our 130 or so Air Force bases. Not a very strong backbone!

Registration

It should be noted that Civil Service does not distinguish between the registered and the non-registered architect. Although registration does not guarantee a better architect for each position, it does validate a person's experience and competence. For a person to become registered today, he must obtain a combination of education and experience of acceptable quality, gain practical professional experience for several years and then, take an intensive, 36 hour exam. In some cases, continuing and demonstrated professional competence must be shown. It would be safe to say that the capabilities of a population of registered architects would be significantly higher than a population of unregistered architects.

The Architect's Position

In an ideal situation the base architect would act as the focal point and monitor the quality and consistency of all projects that contribute to the architectural character of the base. Unfortunately, he is not now in a position to control many of the factors. He often has not been included in the programming phase of a project, when the basic concept (and the programmed amount) is set. He does not see (nor often does he have the time to see) in-house projects that require architectural talent. He usually has very little voice in the design decisions made on military construction projects (MCPs).

The base level architect has other frustrations. In most cases, possibly because he wasn't involved in the programming, the budget isn't there to do a job properly. Frequently, the supervisor is an engineer who doesn't use or appreciate the creative architectural proposals. Not seeing recognition of his talent or any opportunity for advancement, an ambitious architect looks for other job opportunities.

Often, a base level architect will vacate his position because advancement is only to the GS-11 level. Further advancement is to a management position. This factor causes a high turnover in the profession, thus keeping the professional architectural experience level very low.

Managing the Architectural Problem

The resolution of our Air Force design problem rests with management—from the immediate supervisor up through the Base Civil Engineer, Base Commander, major command and Air Staff.

Major commands should encourage the establishment of at least one architectural position at each base. The bases should get their vacant architectural positions filled with the best talent possible, then keep, use and recognize the good talent they have.

Military architects should be used to supplement the civilian talent as the architectural workload requires. As the long-term workload varies from base to base, the Command Resource Managers should shift the military architect slots accordingly.

We need to explore the possibility of raising the base architect's position to a higher level (and grade)—say a staff position reporting to the Chief of the Engineering and Environmental Planning Branch. From this vantage point, "The Base Architect" would also be responsible for reviewing the Comprehensive Plan, reviewing programming documents for architectural adequacy, and advising the Construction Management Section on material selection and change orders. Also to maintain architectural consistency, "The Base Architect" should review any in-house project that will have visual impact. His regular attendance at the Facilities Board would pay dividends in establish-

Figure 1: Distribution of Air Force Architects.

	Degree	Filling Base Level Architect Slot	Filling Cmd Level Architect Slot	Filling Other than a 5525A slot in CE career field
Officer	Arch	50	7	71
	Arch/Engrg	11	3	49
Civilian	Arch & Arch/Engrg	85	20	24
	Total	146	30	144

ing and/or protecting the architectural character of the base.

Next, to obtain the grade of GS-12 or higher in an architectural position, registration should be required by the Civil Service qualification standard, not to improve the image of the profession, but to increase the capabilities of the architects. Registration is needed in the Air Force for the same reason it is required by law in the private sector—to help insure the competency of the practitioner.

Supervisors must appreciate that architects need time for professional development—to remain current with the state-of-the-art. The AFIT School of Civil Engineering has now developed a two week course in architectural planning (ENG 490). This will fill a longstanding void. Although the course is directed primarily at base level architects, other individuals closely associated with the design process, including supervisors, are encouraged to attend. Three other School of Civil Engineering courses are also valuable to the Air Force architect: ENG 480—Building Systems Maintenance Engineering; ENG 415—Contract Preparation; and MGT 424—Contract Management.

The foundation for good design is a firm, well coordinated Base Comprehensive Plan. This plan cannot be worked out by the technician in the back room. It takes the active interest and participation of the top senior Commanders on the base, along with the advice and assistance of a qualified community planner or architect. Each new Base Commander should take the time to review and understand all facets of the Comprehensive Plan.

COLONEL SCHEATZLE *is Chief, Design and Construction Management, DCS/Engineering and Services, Headquarters Strategic Air Command, Offutt AFB, Nebraska. He earned a bachelor's degree in architecture from Kent State University and a master's degree in environic engineering from Arizona State University. He is a Registered Architect and a registered Professional Engineer in Ohio and a member of the American Institute of Architects.*

Major commands and the Air Staff should consider directing additional recognition to the base level architect through the Design Awards Program. As it presently stands, the program tends to recognize civilian A-E firms, AFRCEs and construction agents, rather than individuals. The program should be modified to also spotlight the better O&M project design work done by the base architect.

Finally, our top level managers must understand that **the base architect is a key person in the Air Force's endeavor to improve the quality of service life.** His work can have a significant effect on the Commander's efforts to create a livable base environment, and thus retain competent people. We need to take every opportunity at courses and conferences to educate our top level managers so that they will expect and demand good design. E&S

Captain's Board Selects 66 for Promotion

Allen, Elliott W., Jr
**Barker, James B.
Barnum, Wayne J.
Bitler, Steven A.
Boggan, Garry H.
Caffrey, Matthew B., Jr
Carvajal, John L., Jr
**Cavanaugh, Stephen
**Clarke, Richard L.
**Connell, David W.
**Emerick, Kenneth C.
**Erdman, Ronald R.
Faile, Marty M.
**Fink, Timothy M.
**Fitzgerald, William J.
**Frey, Alan S.
**Graban, Gaillard M.
Hanson, George V., Jr
**Hayden, Danney R.
Heiken, Edward D., Jr
Henry, Michael
Holderman, Frederick
**Horne, Michael W.
**Hudgins, John
**Hunt, Rodney L.
Jantz, Martin L.
**Jones, Joseph T., Jr
**Kennedy, Michael R.
**Kirk, William R.
**Koshiyama, Glenn T.
Lawrence, Stanley
**Lew, Alan E.
Macios, Earnest M.
*Marshall, Bruce L.
**Martin, William L.
Mortensen, Kenneth
*Ness, Dwight R.
Nichols, David R.
Parker, Timothy A.
Pinnix, Anthony C.
**Ploszaj, Leon J.
Pride, David A.
**Prior, John P.
**Quinn, William R.
**Rish, James C.
Rojko, Paul M.
**Rumsey, Hal A.
**Russell, John P., Jr
**Ryburn, James T.
**Salomon, Roy K.
Shull, Ray L.
Simmons, Ralph C.
**Smith, Douglas E.
**Smith, Eugene C.
**Smith, Jesse J.
**Sparkman, Charles C.
Strange, Elton L.
**Summerlin, James A.
**Tobola, Vincent J., Jr
**Ulrich, James D.
**Walker, Archie G., III
**Wallington Cary R.
**Watzke, Anthony R.
**Wiesner, Richard M.
**Wise, Timothy G.
Woods, Benjamin E.

*Services Officers
**Regular Officers

Directorate of Engineering and Services

Current Emphasis

brief commentary on significant developments

FAMILY HOUSING ELECTRIC DEMAND DEFERMENT SYSTEMS--Installation of these systems will begin shortly at 42 locations, involving some 38,000 units. These devices will intermittently cycle off the air conditioner compressors for short periods of time. Impact on occupants is minimal. However, these systems will reduce electric utility costs by improving the base load factor and by shifting air conconditioning loads from less efficient high ambient operating period to favorable evening make-up period. (AF/LEEHH/X50229)

FY 1981/82 MCP SCHEDULE--Significant portions of the FY 1981 MCP command submittals are being authorized for design to meet the Congressional requirement of 35% design completion by February 1980. By the end of May 1979, MAJCOMs will be advised of projects that comprise the content of the FY 1981 MCP. This initial program will form the basis of the Program Objective Memorandum (POM) and full documentation will be required by July 1979. We plan an early start on the FY 1982 MCP. (AF/LEEPB/X72135)

THE CIVIL ENGINEERING CONTRACT REPORTING SYSTEM (CECORS)--is entering the field test phase prior to worldwide release in Sep 1979. CECORS is an on-line BEAMS subsystem which is replacing the MAREMIC. It is the first system designed to take advantage of cathode ray tube (CRT) terminal technology and is a forerunner of future changes in BEAMS. CECORS has expanded the base level capability to monitor all projects and service contracts regardless of fund source and automatically reports facility projects by contract to MAJCOMs. As an optical feature there are two techniques available locally for programming and monitoring the engineering design. (AFESC/970-6235)

MCP DESIGN DISCIPLINE--During the FY 1980 MCP hearings, sub-committee criticism was received for "wastage" of P-313 design funds due to excessive redesign and extensive user changes at the 90% point. Policy has been issued aimed at holding redesign costs to 4.9% of the initial A-E fee (vice current 6.2% actual) and restricting post award user changes to only operational requirements. (AF/LEEE/X74157)

COCESS CONTRACTS--A new standard COCESS contract format was recently released for Air Force-wide use. This contract format is the result of several years development and testing, spearheaded by SAC. It reduces the potential for contractor fraud as well as the time required to manage the contract. The new format is required for all future contracts. Existing contracts should be extended only for the time required to prepare the expanded Material Requirements List (MRL) necessary with the improved forms. (AFESC/970-6235)

CAREER DEVELOPMENT BROCHURE--The USAF CESMET is compiling a brochure for officers entering the Civil Engineering career field. It will explain the opportunities and challenges that will confront them as both Air Force officers and engineers. The brochure will lay out a typical time-phase plan detailing career and educational development needs as well as constraints that each officer should consider. The brochure is now being staffed prior to release. (AF/LEET/X71184)

Today, the Air Force is in the process of changing the Spartan-like image of military life. The Air Force is concerned and convinced of the need for better design, more design emphasis and the promotion of design by Air Force professionals.

Featuring a rustic motif, this airmen's dining hall is as up-to-date as those found off-base.

Design Art and the Quality of Facilities

by Mrs Ferhunde Elgun, RA

Successful use of new design approaches to Air Force buildings requires the help of a new kind of professional, one who commands complete and current expert knowledge of all elements of a building's exterior and interior design, and one who is able to analyze and respond to the essential needs of his client. We in the Air Force are concerned and convinced of the need for better design, more design emphasis and more promotion of designs within the Air Force by Air Force professionals.

Pride is that intangible feeling of satisfaction or delight a person has in those things dear to him. Can an Air Force member (military or civilian) have a sense of pride in Government facilities? Certainly, if the office he works in is enjoyable because it has a colorful and efficient arrangement, the house he lives in is comfortable, and the facilities on his base are well designed, constructed and maintained. All of these things relate directly to "livability" and they are important to the individual and the Air Force collectively. Base livability may be defined as **the total of all the physical, administrative, regulatory and socio-environmental events or circumstances that the individual encounters in the course of his life.** Livability has to do with satisfying basic needs like shelter, food and clothing, as well as care and safety. Livability includes big things, such as, being able to reside in comfortable houses, to work in original offices, etc.

The Air Force has been telling young people lately that it wants them to join the service. One big problem has been that most young people don't consider the military establishment an especially attractive way of life. Some of the reluctance is a result of the conditions of everyday living. Usually, military life is not portrayed as being enjoyable. Young people probably have listened to Dad's stories of open bay barracks, tents with mess kits and mess halls. Today, the Air Force is in the process of changing those conditions, and subsequently, slowly changing the Spartan-like image of military life. The unattractive aspect of military living was existing in bar-

ren, impersonal, warehouse-like offices, barracks, etc.

With this situation in mind, the Air Force initiated investigations to determine what it is in their environment that every individual on base needs to satisfy his social needs as a member of a distinct group. As a result, of prime importance to personnel was protection of their material possessions, the need for individual expression in the decor of their habitat, life style, health, comfort, and most important, privacy. With this information, Air Force engineers launched a design effort to improve the living/working accommodations which would answer these needs, all within minimum cost and space limitations. Prior to developing design schemes, designers determined how our people reacted to certain colors, materials and finishes with people-satisfaction being the objective. Nationally prominent civilian architects engaged in design competition had demonstrated that they could do design/decor in the theatrical sense of the word. They worked to insure that psychological, as well as physical, considerations were incorporated into projects. The resultant products were not only ingenious and handsomely detailed, but highly dramatic.

Design art is a comprehensive subject that includes not only architectural consideration of interior and exterior design but also involves interior decoration, color coordination and planning, landscaping, town/base planning and all forms of visual communication. This means that efforts to enhance the environment for people can be accomplished by using various design techniques which enrich the living, working and playing space of Air Force bases. The primary goal in design and construction efforts of Air Force facilities is not only to meet mission essential requirements but also to succeed in attaining a people-oriented facility which is an inseparable part of that goal. A successful design, therefore, demands attention to effects and methods to improve employee productivity. We must search for improved methods, materials and procedures. The major issue is the environment. A simple explanation for our environment is where one lives during the 24 hour day. Almost limitless design freedom is ours with the proper selections in textures, finishes and patterns to enhance any building/environment. Every year, manufacturers introduce new materials for better designs. The variety of these materials allows us to develop design concepts to meet almost any need and cost limitation.

People of various talents react quite differently to the elements of design and accordingly develop in different ways talent for art and individual originality. Some are attracted to light and dark colors; others to form, proportion and construction textures. We must provide the unity of art and design technology. We must encourage people to creatively use light and dark colors, material and texture, rhythmic expression and subjective forms. The best designers are those who find new ways through their own intuition. As designers we must be receptive to everything new. We must work on building and site forms (geometric and rhythmic), problems of proportion and expressive pictoral composition. Assignments with textures and subjective forms are something new in the Air Force. Creativity is one of the most important factors in design.

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Once a "philosophy" of design is established, the designer should concentrate in a free-wheeling fashion, on injecting the needs and aspirations of the user. This presents the architect and engineer with a clearly defined challenge to provide a successful design for both exteriors and interiors. Generally, the overwhelming majority of design techniques and applications used on a certain facility can be favorably applied to other facilities. Care must be taken, however, to avoid oversight of unique situations requiring unique solutions. A fully developed design "philosophy" can avoid such oversights and add immeasurably in the successful production of people-oriented facility design. The opportunity to succeed is considerably greater now with the advent of many new, attractive cost competitive materials and growing user appeal for attractively/aesthetically appointed Air Force facilities. The architect/designer must choose materials which meet the client's criteria for natural beauty and durability and accomplish it within the framework of today's economic market.

There are manuals and directives which tell designers how to design Air Force buildings. However, there is a fine line between design goals/objectives and design solution/techniques. Therefore, we can establish the design goals but not the design solution or techniques. Design objectives can be standardized but not the design art/techniques. Some of the Government's stringent building codes, established for safety reasons, have posed many problems for designers, frequently limiting the use of products that are more desirable for the building forming on the drawing board. Often, these restrictions prohibit materials that are more energy efficient or more environmentally suitable. Fire codes, in most instances, have been a particular problem, especially when

some wall materials proposed for interior/exterior use are wood siding. But codes may not be so restrictive to a creative designer as they appear. There are methods and ways to solve the problem such as staining or treating the wood, etc. All of these objectives have in common the well intended desire to improve mission accomplishment.

The process of defining acceptable design techniques brings the using organization and design team together. Their joint analyses of design solutions and functional relationships will normally improve their mutual understanding of each other's problems, and result in a better product and a satisfied customer. All techniques of design must therefore meet the test of the human element. Create a cheerful atmosphere inside as well as complement the outside. Design for beauty. Gloomy buildings can make gloomy employees. Concern yourself not only with good engineering and construction practice, but also strive for a best-finished product that looks good in function, form and color.

Designers must encourage the people for whom they work—many of course have definite tastes—to play an active role in the selection of furnishings and materials. Such a people-oriented approach requires intense concentration on the user's need instead of "rules" that construct rather than create. A building is defined ultimately by the kinds of human needs it satisfies. Projects which are judged the best are the ones that feel as right for the person as for the place.

Tomorrow's Air Force facilities should attract Air Force members, not drive them away. They should be more than just a place for shelter without any imaginative design art at all. At one time that sort of design for Air Force all too often was the rule. The photometrics were nice. The aesthetics were not. That is no longer true. Good looks cost very little more, if indeed, they are not less expensive. A little bit of imagination and flair with various design art and techniques does a lot for a building or a base. Commanders on every base must have interest in base beautification at low cost, of course, and not only in buildings and streets, but other areas such as trees, fire hydrants, signs, etc. We must think about everything. When we are trying to improve our base, it is not for personal gain or for profit, but for posterity.

Our current "people-oriented" programs for dormitory and dining hall—modernizations, new schools, new recreational facilities, etc., are examples where the effective use of design methods and interior/exterior materials and colors enhance the facilities. In the past few years, designers and engineers have introduced many new concepts into the design and construction of facilities. A few examples of these new concepts are the use of carpet, more color in interior and exterior design, furniture renovation programs, better living projects, etc. Construction materials and methods have also changed in response to cost increases, such as thermopane windows for energy conservation, maintenance-free finishes

The completely redecorated dining hall at Zweibrucken AB, Germany features new furniture, drapes and kitchen equipment.

The warmth of wood adds atmosphere to this airmen's dining facility.

(wall coverings, etc.). Within the limited available funding, we also improve the exteriors of these bases by adding landscaping where none or very little existed, new front entrances, when they are needed, new siding where old siding has deteriorated, carports where they are justified, privacy fences, patios, various enclosures, storage areas and recreation areas and equipment as funds allowed.

The following are suggestions which can apply to every building or area on a base. Various projects are presented which go beyond economy and efficiency to satisfy architectural criteria as well. Each of them has made use of an inexpensive idea or an intriguing design approach that could have application elsewhere. The examples chosen fall into basic categories, those that deal with improved human environment and those that enrich the natural environment; some do both. Design technique varies with any type construction: schools, bowling alleys, shopping centers, offices, restaurants, recreational areas, industrial or commercial complexes, etc.

The winner of the 1977 Air Force interior design award was the Zweibrucken Dining Hall. It is an elegant building with a beautifully detailed interior finish that demonstrates a sensitive response which includes both good design and an aesthetic solution to a major human problem, a good enjoyable dining environment. This is an example of a good remodeling job.

Dormitories

The airman's dormitory environment is a significant factor in his or her decision to remain or get out of the Air Force. In those first formative years of service, this environment helps shape an airman's opinion regarding military life. For this opinion to be a positive one, it is essential that his place of residence be in a state of good repair, properly maintained, have decent furnishings and provide a degree of privacy. Dormitories must be elevated to an acceptable state of repair and maintained in that condition. Since it is unlikely that large sums of money will be forthcoming for this purpose, we must do everything possible within current resources to reach this goal. This will require a positive effort on the part of all responsible personnel, commanders, and others who are directly concerned with the facilities. It will also necessitate increased efforts and the acceptance of greater responsibility on the part of the user himself, for in the final analysis, it is the occupant who determines whether or not his dormitory is his home.

Offices

More has happened with office planning between the mid-1960s and the mid-1970s than had happened in the previous 100 years. All of it is the result of continuous and oftentimes radical changes. During this last decade, business has changed the way it operates, employees have changed in attitudes and motivation, and steadily spiraling upward costs have changed fiscal priorities and perspectives. These pervasive and powerful changes drastically affected all those

Artist's drawing shows proposed interior of airmen's dorm room.

The interior of this nursery facility at Ramstein AB, Germany features a patterned carpet.

The elementary school at Ramstein AB follows open space concepts to allow team teaching, student mobility.

Partitions, carpeting and plantings all contribute to the open space office environment at HQ USAFE.

The Ramstein AB High School offers courses in cosmetology in this well-equipped classroom.

connected with office planning: architects, interior designers and manufacturers. Initially, office planners responded to this hectic period of change with many diverse and multi-faceted office planning concepts. Only two of these concepts, however, survived the practical test of time: the landscape concept and the privacy panel concept. **Don't design an open office with a closed mind.** Rethink the open office concept from top to bottom. The ability to adapt quickly and easily to changing needs cannot be accomplished by furniture and landscape screens alone. Flexibility in utilities (telephone and electricity) is necessary to support functional changes in the open office space. This can be solved with access floors. Task lighting, i.e., putting general lighting into the woodwork of office furniture is another new concept in the open office design and also results in energy conservation. The total effect is open, convenient and movable. Bold colors, drapes, greenery, patterned carpeting and colorful furniture create a motivating work environment in the open office area. An example of such a design is the Engineering and Construction Directorate addition to the existing HQ USAFE/Engineering and Services building at Ramstein AB, Germany.

Schools

Tomorrow's schools? A place to teach, or to learn? A place of discipline or demonstration of democracy? Education, as it reexamines its mission, poses shifting challenges to school planners. Architects seek to shape the environment (exterior and interior) firm enough to help mold the process, yet fluid enough to be shaped by future unknown changes. One example of this type of building is the Ramstein School Complex. The Elementary School follows modern open space concepts to permit team teaching, high student mobility and easy change in the size of groups. The entire school is carpeted with matching accent wall colors.

Religious Buildings

Take a design cue from the RAF Chicksands (United Kingdom) Chapel. The architect used an all-wood ceiling as a dominant motif over the entire sanctuary area. Colored ornamental glass on the altar area gives religious appeal to the building. All wooden surfaces are treated to be fire-retardant.

Dining Area, Wilford Hall Medical Center, Randolph AFB.

Clinic Lobby, Wilford Hall Medical Center, Randolph AFB.

Checkout Area, Randolph AFB Commissary

The optimum way to meet our Air Force user's needs and to maintain a highly efficient and motivated Air Force is to design our facilities . . .

From the Inside Out

by Gary Lynn, RA

Over the past several years, we have experienced a tremendous awakening and acceptance of the need to create a better working, living and recreational environment for our Air Force people. In response to this need, there has been an emergence of numerous Air Force programs and policies geared toward design improvement. It is important, however, to recognize that these Air Staff programs and policies are not end products in themselves; instead, they have created a climate which allows trained professionals to produce outstanding interior design solutions. Architects, both in the Air Force and as hired consultants, are being challenged as never before, and part of this challenge centers around the ability to successfully create interior environments which are both responsive to the users' needs and visually appealing.

The profession of interior architecture or interior design has experienced tremendous growth and interest in the past several years, both within the Air Force and in the private sector. We are finding that interior design now requires and even demands full time attention at many bases and major commands. While the approach to and enthusiasm for interior design vary from command to command, historically, it has been regarded as basically an architectural responsibility.

If we look at the evolution of interior design within the Air Force, we see that before the 1973-74 timeframe there was no formal program. During the early 1970s, a few Military Construction Projects (MCPs) (headquarters facility for Military Airlift Command at Scott AFB and headquarters facility for Headquarters Command at Bolling AFB) demonstrated the value of good interior design.

Typical Waiting Area, Wilford Hall Medical Center

Clinic Lobby, Wilford Hall Medical Center, Randolph AFB.

Both of these projects, and others like them since, were steps in the right direction and clearly showed that interior design involved much more than simply selecting structural finishes.

Some of the benefits of good interior design have been:

- **Improved morale and increased productivity;**
- **Improved communications and work flow;**
- **Savings of floor space required for a given function;**
- **Reduced construction time;**
- **Reduced construction and maintenance costs; and**
- **Reduced cost of office moves permits quicker and easier moves.**

We found that there are two key ingredients in any successful interior design effort (MCP, O&M, or NAF):

- **Professional help—trained/experienced interior architect;** and
- **Keen interest of top management.**

Currently there is a major trend toward the renovation of older buildings in the private sector. The Air Force has been renovating and upgrading older facilities for quite some time. Within the Air Force, where many of our facilities were constructed under very austere funding limitations, and where we are faced with lower budgets for new facilities, we are going to be asked to continue to renovate and use older buildings. **Quality interior design can contribute significantly to the enhanced use of these older facilities.**

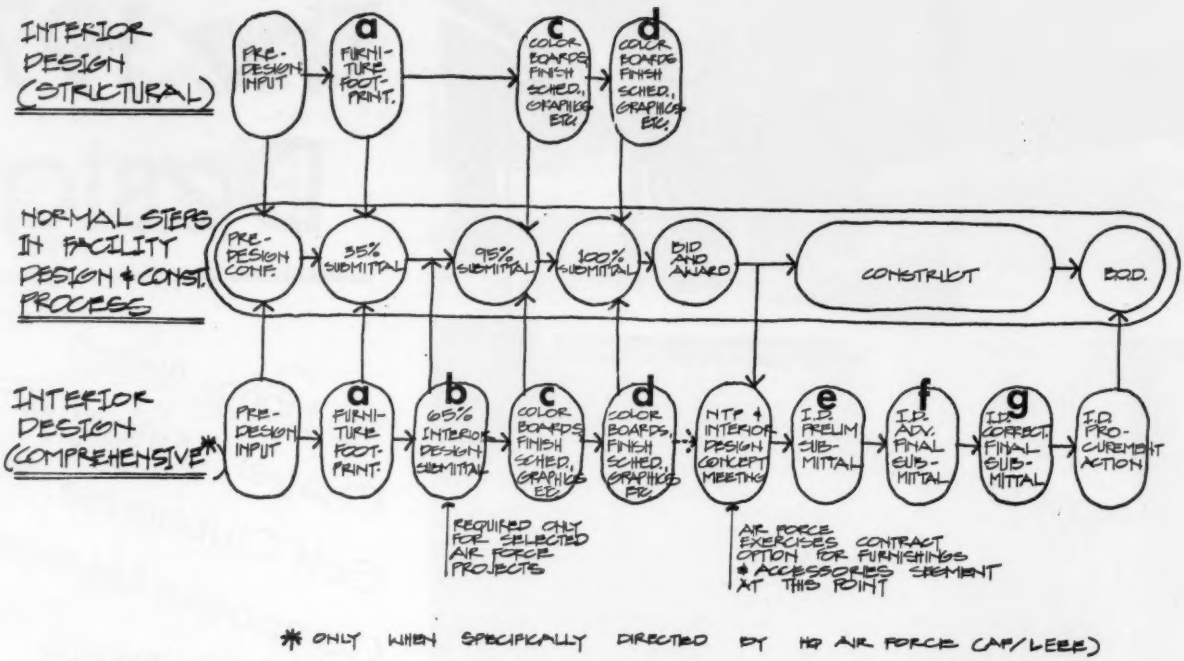
To minimize the cost of future renovation efforts we are now designing and constructing facilities with durability and flexibility as prime considerations but there are other considerations which our designers must address. For some time now, designers of Air Force facilities have been concerned primarily with four aspects of architecture:

- **Reasonable cost;**
- **An efficient layout;**
- **Sound and durable construction;** and
- **An aesthetically pleasing appearance.**

Recently, however, a new field

Cover of the Interior Design Guide

Lobby, Air Force Accounting & Finance Center, Lowry AFB.


INTERIOR DESIGN (STRUCTURAL)
PRE-DESIGN INPUT
a FURNITURE FOOTPRINT
c COLOR BOARDS, FINISH SCHED., GRAPHICS ETC.
d COLOR BOARDS, FINISH SCHED., GRAPHICS ETC.
NORMAL STEPS IN FACILITY DESIGN & CONST. PROCESS
PRE-DESIGN CONF.
35% SUBMITTAL
95% SUBMITTAL
100% SUBMITTAL
BID AND AWARD
CONSTRUCT
BOD.
INTERIOR DESIGN (COMPREHENSIVE)*
PRE-DESIGN INPUT
a FURNITURE FOOTPRINT
b 65% INTERIOR DESIGN SUBMITTAL
c COLOR BOARDS, FINISH SCHED., GRAPHICS ETC.
d COLOR BOARDS, FINISH SCHED., GRAPHICS ETC.
NTP & INTERIOR DESIGN CONCEPT MEETING
e I.D. PRELIM SUBMITTAL
f I.D. ADV. FINAL SUBMITTAL
g I.D. CORRECT. FINAL SUBMITTAL
I.D. PROCUREMENT ACTION
REQUIRED ONLY FOR SELECTED AIR FORCE PROJECTS
AIR FORCE EXERCISES CONTRACT OPTION FOR FURNISHINGS & ACCESSORIES PROCUREMENT AT THIS POINT
* ONLY WHEN SPECIFICALLY DIRECTED BY HQ AIR FORCE (CAP/LEEE)

Integrated Facility Design Flow Chart

of inquiry known as "environmental psychology" introduced a fifth consideration into architecture—namely, the psychological impact of the manmade environment on its inhabitants. This fifth aspect which is often referred to as a behavioral approach to design, focuses on the ability of a design solution to foster desired behavior and eliminate negative responses. Many recent projects have been designed using this modified behavioral approach. This has been accomplished by requiring our designers to submit a written statement of interior design objectives for each space/function in a project **prior** to the start of design. These design objectives (not solutions) are then coordinated with the using agency. While the primary purpose of this approach was to require our designers to consider the psychological and behavioral needs of the users of each space, we found that the written objectives also allowed early user participation/input without getting bogged down in the minute details of a proposed solution. This statement of interior design objectives is a significant step in removing some of the subjectivity that has been inherent in numerous past interior design efforts. The statement of objectives serves as a coordinated foundation upon which the designer can base his design decisions with respect to furniture selections, wall color and texture, carpet color, etc.

As an aid to designers and design agents, in their efforts to prepare outstanding interior design schemes, the Central Region AFRCE published an **Interior Design Guide.** The sole purpose of this document is to clearly define the process required to achieve a fully integrated behavioral approach to design. The Guide outlines the process and allows designers to concentrate on designing. It also introduces a procedure wherein interior architects and space planners are brought on the design team early. The Guide has been in use for over a year and has proven to be a valuable tool in the development of outstanding interior design solutions.

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Someone once said that everything that doesn't happen by design, happens by accident. It should be painfully obvious that much of our Air Force environment has been both accidental and haphazard. It should also be obvious, **and tremendously encouraging,** that the Air Force is making a concentrated effort to reverse this situation. Such efforts as the overall Design Excellence Program, the Air Force Design Awards Program, the new signage and graphics manual, and the new interior design manual, all point to an initiative and attitude within the Air Force that cannot

(continued on page 36)

The 1978 Design A

Chapel, Mather AFB, California

Golf Clubhouse, Hickam AFB, Hawaii

Composite Medical Facility, Griffiss AFB, New York

Chapel, RAF Chicksands, England

1st Honor Award

Chapel, Mather AFB, Ca

Golf Clubhouse, Hickam

Composite Medical Facili

2nd Honor Award

Chapel, RAF Chicksand

Chapel, Peterson AFB,

Honorable Mention

Alter Six Buildings, Moo

Dormitory, Hickam AFB

NCO Club, Peterson AF

Special Award

Aerospace Defense Com

The above named facilities at the installations listed were adjudged the Air Force Design Award winners for 1978 last December. Certificates were presented by Maj Gen William D. Gilbert, Director of Engineering and Services, HQ USAF, to representatives from each of the major commands and Air Force Regional Civil Engineer Offices that were involved in an award winning project. The 1978 program represents the third consecutive year that this program has been held and

3 Air Force Awards

California
m AFB, Hawaii
cility, Griffiss AFB, NY

nds, England
3, Colorado

oody AFB, Georgia
FB, Hawaii
AFB, Colorado

ommand, Colorado

the first year that jury membership included a design professional from the academic community.

Of special note was the award presentation to Aerospace Defense Command for Peterson AFB. The jury applauded the efforts of ADC which had a unique opportunity to manage the design of many new buildings over a short period of time and for their interest and success in achieving quality architectural design at the installation.

Chapel, Peterson AFB, Colorado

Alter Six Buildings, Moody AFB, Georgia

Dormitory, Hickam AFB, Hawaii

NCO Club, Peterson AFB, Colorado

The Air Force is stepping further into the mainstream with a variety of people-oriented programs, including people-oriented architecture. It's critically important that we make an extra, special effort to insure that everything in the process receives careful consideration.

QUALITY DESIGN REQUIRES NO MAGIC

Photographs used throughout this article depict various architectural design features employed in many of the facilities on Peterson AFB. All of the photographs were taken by the author.

by Foster A. Hockett, RA

The quality of the Air Force constructed environment remains below the quality of similar environments in the private sector. It has often been stated that this condition evolved primarily through imposed limits on both available time and dollars. Certainly, the time allotted to program, plan and design a building is a factor in its success, and obviously the project budget can be seen as either a limit or an opportunity. In any case, it becomes apparent that the lack of quality in our design environment is primarily due to a lack of knowledge of:

- **Positive and negative influences that environments have on people;** and
- **Conceptual/artistic design processes.**

The lack of knowledge is understandable. Until recently, architects were the only established group expressing a concern for the relationships between environments and a variety of psychological processes. The educational and early professional experiences of our first generations of designer/managers occurred in an era where "good design" was equated with embellishment through ornamentation and a lavish use of materials. Ornateness was equated with culture. The opinion that good design costs more was widely supported by experience.

Times, however, are changing. The current architectural attitudes of expression do not require costly embellishment to produce "good design" and the connections between the environment and human processes are central to the rapidly developing field of environmental psychology, and remain as recognized criteria in the design process. The Air Force is stepping further into the mainstream with a variety of people-oriented programs, including people-oriented architecture. A contemporary humanistic architecture requires a strong emphasis on conceptual as well as technological design processes. Everything made by man passes through a design stage on its way from the original idea to physical reality. This design stage includes value assignments and intuitive decisions which cannot be quantitatively evaluated. All creative processes involve an element of risk and yet this same creativity is what is necessary to improve the quality of our environment.

Simply viewing the architectural design process as only a rote step to be accomplished in the production of a building can lead to sterile, stereotyped, institutionalized boxes devoid of visual stimulation, warmth and the sense of purpose. If we exercise special care during the design phase, the result can be functionally appropriate, visually delightful, economically constructed and easily maintained. Today, good design costs no more than bad design. Since our buildings are going to be around for a long time, it's critically important that we make an extra special effort to insure everything in the process, from concept to hardware selection and graphics, receives thoughtful attention. There is no mystery or magic in this, nor is it particularly difficult. It simply requires designers and managers with a special awareness and sensitivity and a willingness to make an extra effort.

An example of what has been discussed is the architectural

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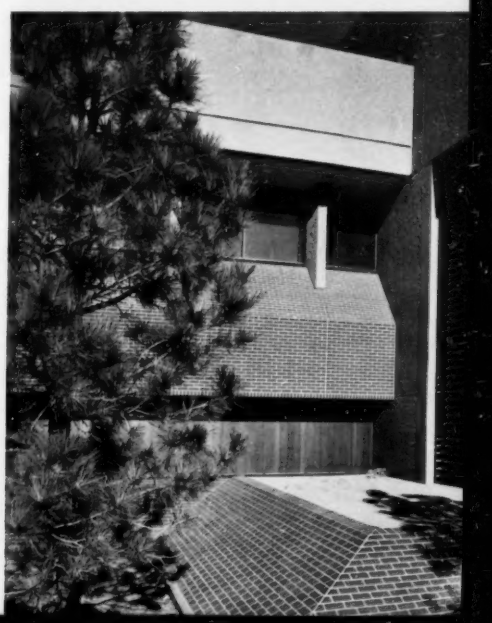
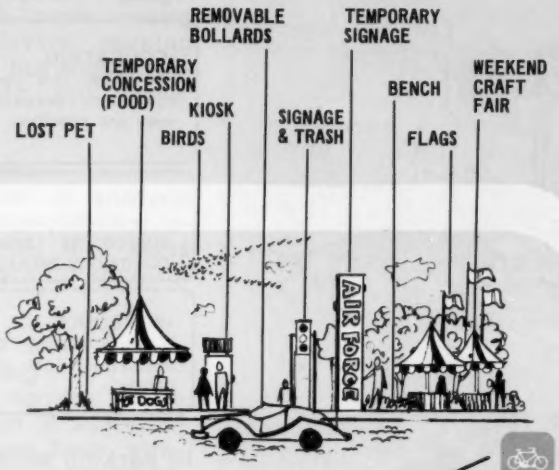


design evident in several facilities at Peterson AFB, Colorado. This base is unique because it is almost entirely new and the facilities reflect an unusual attention to architectural design, the selection of compatible materials and construction quality.

As a result of the efforts made possible by aware, knowledgeable and interested engineering personnel at both Headquarters Aerospace Defense Command and other involved agencies, Peterson AFB was presented a special award by the 1978 Air Force Design Awards Jury. The award recognized the achievement of design excellence for the "consistently high quality of design" at Peterson AFB.

Again, good design costs no more than bad design. C&S

AIR FORCE COMMUNITY CENTER



Here are design details needed to successfully accomplish a community center requirement.

by Theodore T. Shierk, RLA

The Air Force Community Center is a means to provide a quality recreational shopping experience for all Air Force people. Differing from the civilian shopping center in that it offers recreational activities beyond the retail shopping need, the Air Force center is also intended to:

- **Strengthen the Air Force community identity;**
- **Provide a sense of belonging for every member of the Air Force family;** and
- **Present a tangible benefit for being Air Force.**

Air Force Chief of Staff General Lew Allen, Jr emphasized the purpose with these words late last year:

"The quality of life we are able to offer must be sufficiently appealing that capable people —who could compete handily in the civilian job market—elect to pursue a military career . . .

"In sum, the best way to provide the most capability for the least cost is to provide a quality of life which appeals to quality people. The surest way to do right by the taxpayer is to do right by our people. . ."

Just as a complex organism is separated into basic chemistry for study and understanding, so is the Air Force community center program better understood when diagrammed to show critical support requirements, **Figure 1.** Once identified, the program coordinator (likely an engineer) must insure that the requirements are satisfied or that the interest groups represented by the requirements are brought into the planning process early, fully understanding the crucial importance of their active participation.

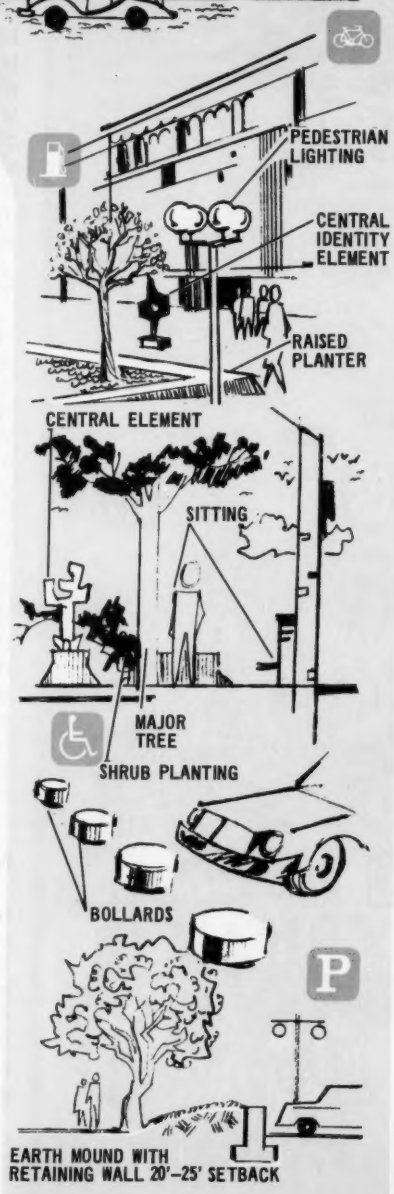
The following list presents design details needed to successfully accomplish one Air Force community center requirement—designing the best possible space.

Vehicular Traffic Control

Remember community center and regional traffic flow, traffic signage/signals, and traffic control devices.

Pedestrian Traffic

Think pedestrian circulation



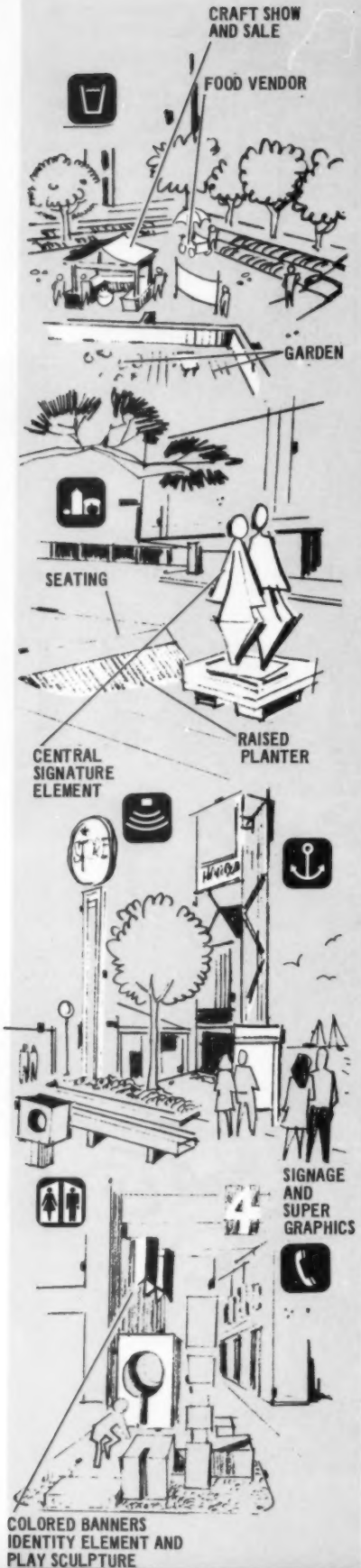


Figure 1: Air Force Community Center Critical Support Diagram

in parking areas, pedestrian transition between parking and mall areas, and pedestrian flow within the mall area. Paving patterns, landscape planters, signage, bollards, and raised crosswalks, should reinforce, direct and safeguard pedestrian flow.

Community Activity Area

Provide open pedestrian activity spaces for special events and outdoor sales. For example, service organizations and special interest groups such as: wives clubs; Boy Scouts; morale, welfare and recreation groups; or ethnic clubs may find it hard to attract enough people to operate their projects successfully. The community center mall provides an area where these events can take advantage of people who frequent the community center as a "captive audience." The community center patrons, on the other hand, can also expect different and usually interesting activities in the center from week to week.

Memorial/Signature Element

Propose a memorial or element of local significance as the central theme (a signature or identity element) for the community center. Site this element as a visual focal point for the center. The identity element could also double as a play sculpture or outdoor theatre.

Water fountains hold a special potential for the center. Designs which incorporate water flowing over surfaces, rocks or edges should be considered. Water jets or sprays should be limited to moderate weather areas without wind problems. Also, look into solar energy, or wind power, as an innovative means to power these elements.

Landscape Planting

Develop a comprehensive landscape planting plan. The plan should consider an irrigation system and locally available materials requiring minimal maintenance. Selection criteria should include visual impact, crowd control, rate of growth, plant color, seasonal changes, plant texture, hardiness and the creation of a pleasing environment. Hardy ground covers usually are superior to grass in small areas for maintenance, aesthetics and durability.

Microclimate Conditions

Consider wind, precipitation, year round temperature, shade and snow conditions when developing the community center. Landscape and architectural treatments should be designed to lessen adverse climatic conditions.

Pedestrian Paving

Investigate the use of interesting paving materials (split concrete, paving bricks, exposed aggregate, colored con-

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crete, etc.) in pedestrian mall areas. The paving pattern should: establish pedestrian traffic flow; define separation between passive seating and active traffic areas; and identify pedestrian crosswalks.

Architectural Treatment

Consider raised planting beds formed by vertical concrete retainers, sloped pavers, landscaping beams, or railroad ties to strengthen visual and improve maintenance considerations.

Investigate varying the elevation of the pedestrian mall and the parking areas to suit the natural site topography. If applicable, elevation steps in the parking lot or a variety of elevations in the pedestrian mall should save grading cost and improve drainage while providing an important visual interest.

Signage

Develop a series of graphic designs (based on international symbols) for use throughout the center. The signs should have a uniform format making use of shape, size, color and style. Propose a name and graphic logo to identify the center. The logo should be part of the signage system establishing a sense of unity and identity for the center. Imaginative uses of the logo across the base are encouraged.

Street Furniture

Insure that street furniture is practical, designed to project scale/theme, and logically located (i.e., telephone booths, trash containers, paper vending machines, bicycle parking stands, shuttle bus shelter, pedestrian lighting and similar items).

Bicycle Circulation

Attention must be given to bicycle circulation patterns, location of regional bike paths and bicycle parking requirements.

Pedestrian Seating

Often, timber benches can be cantilevered from or supported on raised planting beds. However, the benches must be arranged according to how people actually will use them. For example, seating areas must be flexible for many uses. Seating could be a rest area; a place to sit and enjoy watching children playing or people passing; a point to gather for conversation, a lunch, or a snack; or an impromptu location for concerts, meetings and lectures. In other words, put the bench where you would like to sit and make the bench of a material you would like to sit on. (Wood is normally more inviting than concrete.)

Kiosk/Gazebo

Consider the use of a kiosk and a gazebo with the community center for advertising garage sales, and posting notices. A gazebo could support special concession activities, i.e., an area for a hot dog cart or the hub of a weekend art show or flea market.

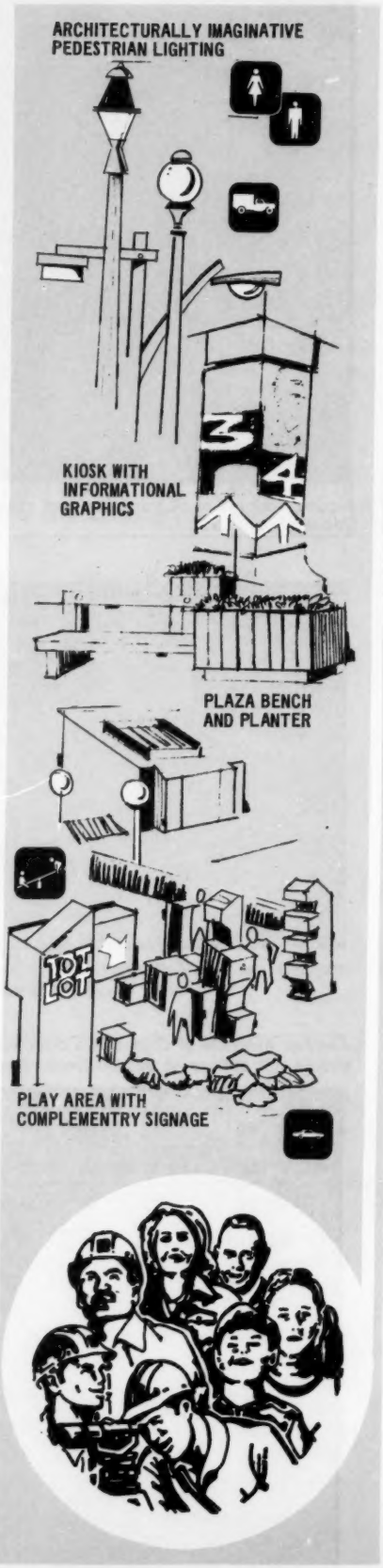
Curb Ramping

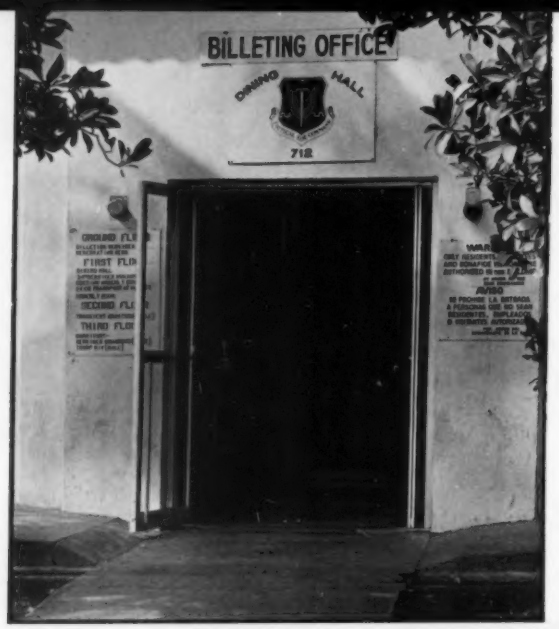
Carryout/pickup cart ramps and wheelchair ramps could be replaced by sloped paving and bollards. Where possible, handicapped parking should be designed for immediate access to pedestrian areas, eliminating the need to negotiate curbs, ramps and traffic.

Playground Areas

Consider a playground or tot

(continued on page 36)





A good example of clutter but a bad example of what an entrance should look like.

Controlling Clutter or Giving Design a Chance

Another example of clutter is a directional sign like this. It should not appear at busy intersections.

The design professional who is endowed with the ability to look forward and visualize good final products usually has good hindsight also. He can eliminate past contributions that no longer serve a purpose or he can preserve those things that are significant today.

by John B. Zukosky, RA

What more can be said about this view except that some type of screening is definitely needed.

This example of simple masonry screening is appropriate. It hides all types of clutter.

Design arts consist of 90 percent creative housekeeping and 10 percent design within the Air Force. After decades of benign neglect, expediency and ignoring the human element, the real task of designers is to clear enough visual pollution to make a place for design. Of course, a cluttered environment is a dehumanizing environment, but the most disturbing characteristic of it is similar to the problem of a radar navigator. Just as the ground clutter on his scope obscures his target, clutter in our physical environment ob-

scures what we are trying to communicate or obscures our goals of a better, more inviting environment for ourselves or our customers.

Even at its monochromatic worst, the military environment could be presentable if the various forms of extraneous clutter could be eliminated and the forms of clutter required by Air Force regulations for our day-to-day operation could be organized, dressed up or relocated. It is only when this is accomplished that the designer and his designs have a chance of making an impact. This is true of landscape, planning, signage, interior decoration, architecture and all forms of design.

The design professional who is endowed with the ability to look forward and visualize good final products usually has good hindsight also. He can eliminate past contributions that no longer serve a purpose or he can preserve those things that are significant today.

Where do we start? Of necessity, the scatter gun or saturation bombing approach is usually required. One can start anywhere, but starting at the smallest and most manageable scale, the office, one usually has better control. The designer can then work level-by-level to the larger base level scale, gaining momentum along the way. This may be a bit idealistic but this format will be used for the sake of our discussion.

Every office should periodically have its clutter quotient assessed. Look at the floor plan or office arrangement, at the walls, at the ceiling, at the windows, at the signage and at the main entries. Strangely enough, a functionally arranged office is usually well organized and uncluttered. If people and paper are flowing in the right direction, your chances of a good-looking office are much better. If, after rearranging, the desired effect is not achieved, then start looking for other difficulties.

Clutter is somewhat insidious, but when it reaches epidemic proportions it is easy to detect. Such things as mismatched or residential type furniture in a GSA office environment are very obvious. Are tables piled high with books, computer printouts or papers? Do some or all desks have the same problem? Scenes like these point to inadequate furnishings. A credenza at the back or a side counter can help. Perhaps more bookcases or files are required. Mismatched or odd pieces of furniture can be traded in or traded with another office or painted.

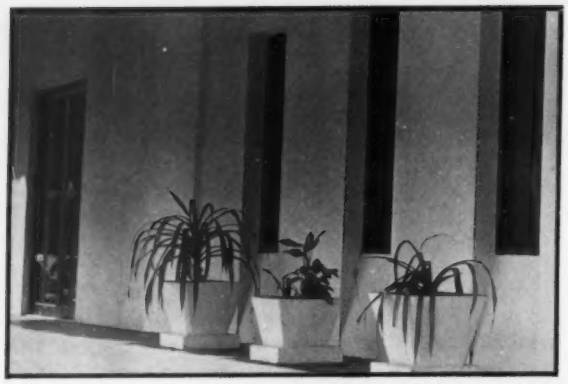
Generally, the reciprocal is the culprit. There is usually an empire building that results in overstuffed offices. Extra desks, tables and chairs are tenaciously clung to. Many volumes of seldom or never used books are prominently displayed.

Now that the right amount and arrangement of matching furniture is accomplished, we can turn to the next greatest offender, the walls. Walls are forced to bear a large bulk of the military's communication. Walls are used to support official charts, maps, bulletin boards, signs, official and semi-official pictures, safety messages, and a host of noncommunicative items; most if not all of these are required to be prominently displayed.

Often this means an oversized, overcrowded bulletin board is located dead center of the main entry, or worse still, on the outside of the building alongside the main entrance. A more suitable location is a break area, a lunch room or a hallway in the vicinity of the restrooms. In such locations, the bulletin board gets just as much exposure without giving a visitor or customer who is not interested in the bulletin board a bad impression. Many bulletin boards seem to be approach-

Although this bulletin board may not be the ultimate, it is a giant step in the right direction.

Bulletin boards like this, although organized, are still not candidates for main entrances.



A little design and some planning turned a former cluttered entry into this attractive facade.

ing genuine antiquity. Old pinpricked boards should be replaced with handsome new materials. New bulletin boards should be constructed in such a manner that each item has an individual slot or pocket. This not only looks better, but if each item is prominently displayed, it is more likely to be read!

Maps, charts and pictures have much in common; quite often they are framed with thick pine frames and painted black. Throw the black paint out! Thick frames should be painted to match the surrounding walls or eliminated by using a borderless piece of plexiglas. This reduces the clutter and makes the framed material more prominent than its frame. Wall hung items should never be hung near the ceiling. A better choice is at eye level where people can see them. Since it is difficult to decide at whose eye level things will be hung, a good choice is to align the top of the frames with the top of office dividers, or approximately five feet six inches above the floor. This then becomes the clutter cutoff line. In areas larger than offices or public places, the line can be raised to door height of seven feet, especially if larger items are to be hung. The result is an uncluttered spaciousness above the clutter cutoff line that is visible to anyone moving through an office or from cubicle to cubicle, which can be a relief. After all the required maps, charts and bulletin boards are at their best uncluttered locations, there is usually little room for optional decoration. So remember, even one good, strategically located picture, local art or craft gives a better impression than several ordinary pieces.

Because we in the military are fortunate in that we do not have to advertise, interior signs should be limited as much as possible to telling people where they are when they get there. In other words, a simple sign stating what each office is or does is enough. Through proper building arrangement, proper building directories and official releases of information, people who are unfamiliar with a building should be able to find any office without large arrows or wordy signs.

By now our walls are full, so one yet untapped source for signs is the ceiling; not on the ceiling, but hanging from the ceiling with care. By hanging signs at a standard height of six feet eight inches above the floor, one gets excellent visibility. If a little color or graphic art is added to the sign, it becomes a three dimensional design element which can be added without further cluttering the walls.

With this much accomplished, and with a small amount of additional housekeeping such as making sure the blinds or drapes are all hanging at the same height, the office area should look 90 percent better. Now it is time for the other 10 percent, which is design.

If you are suffering from the monochromatic blues, greens or ivories, now is the time, in accordance with **AFM 88-15,** to call in the architect or other design oriented personnel to select colors, textures and patterns, to designate accent walls, and to develop super graphics.

Super graphics are a valuable tool in reducing clutter. Most people are reluctant to hang charts, maps, etc., on an established wall graphic. Super graphics are by definition large and cannot be-

Super graphics such as this example can turn a ho hum sign or area into something special.

come part of the minutia that offices sometimes acquire. Super graphics can be informative. By replacing "ho-hum" signs with communications that carry a super punch, they can be very decorative by filling an entire wall with a single idea, rather than many smaller ones. Best of all, super graphics reduce boredom by providing something that is big enough that it cannot be ignored from any vantage point.

The next sphere of concern is building exteriors and entrances. Again, the designer's work is 90 percent corrective surgery and 10 percent preventative medicine. Signs on building walls, roofs, fascias, stairs, docks, etc., just reduce the building to the status of a billboard or sign post. When possible, identifying signs should be located in landscaped areas in front of buildings. If proper informational channels are used (such as base maps and directories) advertising should not be necessary. Bulletin boards, unsightly trash cans, vending machines and miscellaneous signs are not appropriate at or near main entries of buildings. When the building is cleaned up, the designer can do his ten percent by suggesting locations for landscape, by defining entries with a new canopy or by a more handsome doorway.

On the grand scale or base level, storage yards, signs for parking and preserving amenities are important to the goal of eliminating clutter.

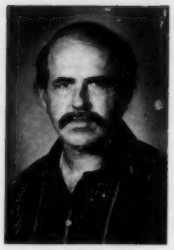
Whether it is an established storage yard or a pile of wood pallets that never seems to go away, screening is a good idea. Masonry and landscaping are low maintenance items that have proven advantages.

Exterior signage is a big offender on the base level. The use of billboards should be limited to the maximum extent. When they are required, professional designers should be called upon to produce signs that add to rather than distract from the overall appearance. Smaller signs have less impact but they should not be neglected. Often the first generation of signs is acceptable but then signs are sometimes tacked on to one another. Signs are sloppily altered. Signs fall into disrepair. At intersections, signs with a multitude of messages and arrows pointing in all directions should be avoided. Base maps and directories should be considered as alternatives to step-by-step and corner-by-corner signage to a front door step.

Billboards stating "Help Keep Your Base Clean" are usually bigger distractions than the litter they prevent. Carefully placed trash receptacles are a better investment than such signs.

Parking is the single most distracting element at the base level. On the larger bases vast seas of parked cars can be seen. They can almost be considered landmarks. The size of parking lots should be limited. Five to 10 percent of existing and new lots should be landscaped with trees and other plant material. Only visitor parking should be located out front; employees should have parking lots behind buildings. Parking lots should be screened by landscape, terrain or building; they should never thrust out into open fields. All this should be accomplished because lots not only look poorly, but they are not very safe places to be. The large lots are high auto accident localities and they are dangerous to pedestrians who must cross lane after lane of traffic to get to a building. With these improvements on parking lots, a much less cluttered appearance can be expected on the base level scale.

JOHN ZUKOSKY *is an architect with the 24th Civil Engineering Squadron, Howard AFB, Canal Zone. He earned his bachelor's degree in architecture from Oklahoma State University and is a Registered Architect in Colorado.*



It goes without saying that if a base possesses certain amenities such as lakes, streams, distant views or open space, these amenities should be preserved. By their very nature they are assets to the human element; they are the exact opposite of clutter.

One such element that comes under pressure from time to time is the formal quadrangle or parade field. If it still exists, it is surrounded by important buildings and is therefore subject to overflow parking lots or siting of new structures. Whatever the pressures, this element must not be lost. Not only does the open quadrangle unify and make an area seem better organized, it is here that youth and adult sports can thrive. Community gathering can occur; jogging can be undertaken without fear for life and limb. In short, this is the most humanizing element that most bases possess.

Visual pollution, clutter or whatever one chooses to call it, must be controlled. It is rather insidious because people easily become accustomed to it. After seeing an unsightly area regularly, the mind blocks it out and the eye finds a more appealing sight. Clutter hinders communication, can be dangerous, reduces efficiency and just as on the radar screen, it obscures our target. By consulting those experienced in the design arts on all levels of decision making, the living, working and playing environment can be improved. Clutter is an enemy over which we have control. E&S

Dining Hall Upgrade Projects: A Tough Recipe

WHAT WAS—This was an entry/exit area of the dining hall at Whiteman AFB, Missouri.

WHAT IS—This is the result of economical and aesthetical design considerations.

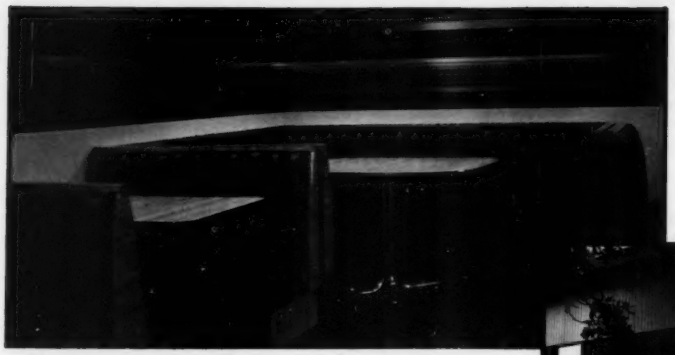
Architects quickly discover that dining hall renovation projects are the most complicated building types with which to work. Many SAC bases have resorted to a plan which greatly simplifies the procedures.

by Capt James Waltman

A dining hall master plan provides an architect with the architectural guidance to develop a dining hall project. It shows an optimum selection and arrangement of equipment and building features designed around an existing dining hall. The job is greatly simplified if the entire facility can be renovated with one military construction program (MCP) project. However, many Strategic Air Command bases have used a combination of minor construction (MC) and repair (R) projects to obtain the same goal. When using a combination of MC and R funds, the architectural guidance in a master plan doesn't tell you all you need to know. The project architect soon discovers that dining halls are one of the most complicated building types with which to work. Many of the complexities are not a part of the design process, but just as essential to the proper completion of the project.

The project architect must be aware of, track and realize the impact of the following on the project: 3080 funds for local and depot purchase of investment equipment; the dining hall equipment table of allowances (TAs); O&M funds required for furnishings and other items under $1,000; correctly listing MC, R and unfunded cost on the MAREMIC; the coordination of base priorities for 3080, O&M, MC and R funds; the identification of architect-engineer (A-E) requirements to the MAJCOM; interior design requirements; the Government Services Administration (GSA) system and its schedules; and realize the impact of 3080 and unfunded cost on the bid schedule.

It is necessary to identify 3080 (investment equipment) funds as early as possible. Two years in advance is ideal. A typical installation of two complete serving lines with back bars can cost $100,000. 3080 funds are provided to each base in a lump sum. The Base Financial Working Group (FWG) and Financial Management Board (FMB) determine how the funds will be used. Unless your requirements are established at base level within the top 20 percent of your priorities, the chances of receiving adequate funding are reduced. When requirements have been identified in advance, the likelihood of the Air Staff funding the requirements as a special project, with fenced money, is greatly enhanced. If requirements have not been



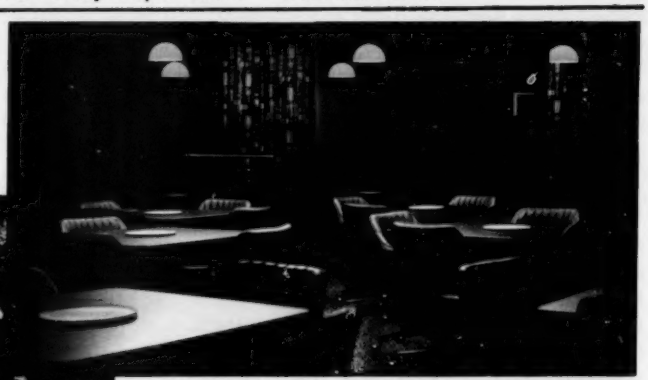
Tufted booths, colored foil wall coverings and carpeting enhance the interior of the dining hall.

A close-up view of the entry of the dining hall reveals excellent examples of the various design techniques employed.

identified and funds are not available, you stand a good chance of losing the project.

If your command fences 3080 funds for your dining hall projects, your problems aren't over! Become familiar with the dining hall equipment TA. There are two distinct categories of equipment: local purchase items and depot purchase items. Local purchase items include mostly the serving line and associated items. Although a due out must be established with base supply, the serving line is normally supplied by the contractor as part of his contract, and the architect must provide the specifications and drawings. Items that require purchase through a depot include most major pieces of food production equipment like ovens, ranges, tilt grills, etc. These items can be supplied from a depot in varying sizes, and power requirements under a single specification and stock number. Specifications are available at base supply. If your design or other requirements dictate a mandatory depot item with additional features or size limitations, it is possible for base supply to submit the requisition with a document identifier code of "AOE" rather than "AOA." AOE is used to provide additional specifications not reflected in a standard depot item. Advice code 2E also requires that no substitutions be made by the depot. Include all additional specifications on AF Form 601b. Depot items must be government-furnished material and can't be furnished by the contractor.

From another perspective, this view shows a ground covered berm area which is framed by cedar timbers and posts.



Another view of the interior shows the use of clean-lined chairs, butcher block tables and attention to lighting.

If new furnishings are to be provided, funds for tables, chairs, drapes, planters and art work will be needed. These should also be identified as a requirement to supply, with an estimated cost. The selection of furnishings should be made as an integral part of your interior design package.

Identifying your projects on the MAREMIC is very important and requires that you understand the differences between minor construction (529), repair (522), maintenance (521), and unfunded cost (592), though maintenance is often included with the repair project. Most are familiar with the minor construction and repair classification of work, but many are not so familiar with items of work to be included in the unfunded category. Project work falling in the unfunded area (as described in **AFM 86-1**) usually involves work to support equipment items. Unfunded 592 costs include the installation of utilities to the serving line and other equipment from a primary source such as a panel box. Also included is the cost of separate exhaust systems to support equipment items such as grills, fryers, ovens, charbroilers, and other pieces of equipment that require ventilation for proper operation or personal safety. But, if these 592 unfunded costs are not identified in advance, funds may not be available at your MAJCOM. The 522, 529 and 592 costs should be listed under the same basic project number with an A, B, C suffix on the MAREMIC.

In addition to identifying your requirements for 3080, MC, R, and unfunded cost, advise your MAJCOM of funds required for A-E services. A-E requirements should be identified at least one year in advance. Although you may feel the architectural and engineering staff exist at your base to handle the project, have you considered the interior design?

Interior design is a major element of dining hall projects. It shouldn't be an afterthought or be done by a civil engineer. If your MAJCOM can't provide interior design assistance, consider using an A-E contract or GSA's interior design staff. Whoever the designers are, they must be familiar with the GSA system and the items available on schedule. To obtain the best furnishings within your budget, it is essential that a number of GSA catalogs be available to the interior designer. When a designer can select from a large number of tables, chairs and other items on schedule, we get the best product for our money. A designer should know what items must be purchased on schedule and which can be purchased off schedule. Otherwise, you may arrive at Base Contracting and find you have specified products not on GSA schedule that must be purchased on schedule, or perhaps selected less than suitable items because you thought you had to buy on schedule.

Once you are sure all the essential ground work is established and your design is complete, consider your bid schedule. Most realize that MC and R work must be separate bid items with the different types of work well defined in the drawings. In this case, we must also provide separate bid items for both unfunded costs and 3080 equipment money. The unfunded cost items must also be clearly defined and bid separately to clearly show that the MC limit has not been exceeded. A maximum bid amount cannot be specified on the bid schedule for 3080 equipment as we do for minor construction work. The low overall, balanced, responsive bid will be accepted by Base Contracting. However, it is quite possible that the low overall bid may contain the highest individual 3080 bid. If the 3080 bid exceeds the amount allocated, additional funds must be requested. If extra funds are not available, the project can't be awarded.

The foregoing has been offered to architects and engineers on the non-design aspects of dining hall projects, especially those with which you may not be familiar. Any one of these subjects could be the topic of a single article. Work closely with Base Food Service, Supply, contracting and your MAJCOM; they can provide detailed information. Many of the items described may be the responsibility of other base agencies, but you must be knowledgeable of them to insure the smooth transition to a completed project.

Insuring the proper priorities for all funds required is the next task. A MAJCOM program that "fences" MC and R funds for dining hall projects certainly makes it easier for the base architect to know his chances of getting a project funded. With or without a fenced program, base assigned MC and R priorities should be high and comparable. Large differences between priorities decrease your chances for project funding. All 3080 equipment should have as near as possible consecutive priorities and be identified as a group required for a specific project. If distributed by the base, all 3080 items must have a high enough priority to insure that all the equipment required is funded rather than the first two-thirds of the list, in which case the project can't proceed even though a high MC/R priority may exist. E&S

CAPTAIN WALTMAN *is an Architect in the Directorate of Engineering and Construction, DCS/Engineering and Services, Headquarters Strategic Air Command, Offutt AFB, Nebraska. He received earned his bachelor's degree in environmental design from the University of Washington.*

WORTH NOTING

Dallas AFRCE Receives Professional Development Award

The Regional Civil Engineer, Central Region, Dallas, Texas, was presented the Dallas Chapter of the Texas Society of Professional Engineers (TSPE) Ninth Government Professional Development Award during National Engineers Week ceremonies in February. Col Elo Mussetto, the Dallas Regional Civil Engineer, accepted the award on behalf of the organization.

This award is presented annually to the government unit judged by TSPE to have made the most outstanding contribution to the advancement and improvement of the engineering profession through its employment practices. The award reflects TSPE's desire to publicly honor the governmental organization which has shown outstanding achievement in adopting and implementing progressive, professional employment policies for its engineering personnel.

The Dallas AFRCE has also been nominated to the National Society of Professional Engineers for consideration for the 1979 NSPE Government Professional Development Award.

Commissary Surcharge Improves Service to Customers

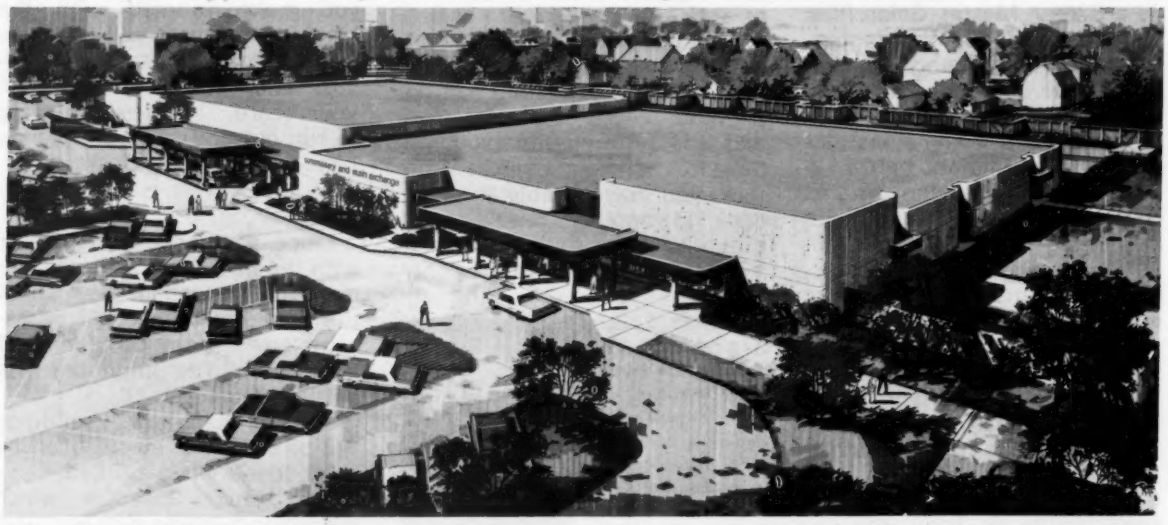
Although shoppers in Air Force commissaries have come to expect a four percent surcharge to their grocery bill, every penny is put back into the commissaries to build new stores, improve old facilities, purchase equipment and pay for operating supplies, as well as most utility costs at the 160 locations throughout the Air Force.

The surcharge is put to work Air Force wide. At Sheppard AFB, Texas, is the soon-to-be opened store; at RAF Bentwaters, United Kingdom, a new store will be completed this year; major modifications for a larger facility at Hanscom AFB, Massachusetts, will mean more shopping space and added convenience to customers. Other projects are planned or under way for completion this year. All are funded by the surcharge.

AFLC Architect Named to AIA Committee

Lt Col Larry G. Garrison, Headquarters Air Force Logistics Command, Wright-Patterson AFB, Ohio, has been appointed to serve on the Architects in Government Committee of the American Institute of Architects. This committee develops programs for the Institute to further represent the architect in Federal, state and local governments. Your concerns as a government architect should be directed to Colonel Garrison at AUTOVON 787-7719.

First "Mall Type" Complex Planned at Wright-Patterson AFB



Contracts have been awarded for construction of the first "mall type" complex in the Air Force at Wright-Patterson AFB, Ohio. The $8 million project will include a 92,350 square foot commissary, 69,293 square foot base exchange, bank, flower shop, fast food facility, optical shop, laundry, barber and beauty shops, and a watch repair shop. Completion of the project is expected in the spring of 1980.

Want to know how to establish a base color plan for your base? Here's a first person report by an architect at McChord AFB who admonishes that a clear head and an open mind are the best assets in the approach to . . .

A Base Color Plan

by Lt Ellen C. Ernst

Probably one of the most difficult tasks an individual must ever do is plan for a project on a large scale where the major impact of the design is a highly subjective set of decisions. An example is color.

No two people have the same opinion about color. Building design is somewhat subjective, especially where aesthetic treatment is concerned, but because most laymen treat design as a rather "mysterious" art, few people, except professional critics, challenge the aesthetic features of buildings. Unfortunately, the same is not true for color. People know, or think they know, color. At least they think they know what they do and do not like. Therefore, color is one of the few areas of design where most people feel they can intrude with their many "cents."

What went through my mind when my boss assigned me to do a 5-Year Master Color Plan for McChord AFB, Washington, was an over-whelming fear that I would be descended upon by everybody and his brother with requests and/or opinions for colors, from buildings to fire hydrants. All of a sudden, I hated color and dreaded the thought of plowing through every available manufacturer's paint chips, not to mention fending off hoards of advisors. So, I kept a profile as low key as possible during the whole project. It saved a lot of grief.

The idea of a color plan does a lot more than tie the aesthetics of a base together. It gathers much information about each facility on base into one document. It organizes the painting of facilities so that one can visualize what is to happen over a space of several years. It provides for the control of ordering and inventory by the planners because in one document they have the colors to be used and square footage of each building/color over a specified or desired time period.

One can't plunge head-first into a project like this. Chances are your base (as mine) has no previous record of a color plan and it is quite possible you will have to start from scratch. With luck, you may be able to get a copy of another base's color plan. We secured one from Wurtsmith AFB, Michigan, only it was done by an architect-engineer firm. At least, it gave me a place from which to start.

LT ERNST *is the Assistant Chief, Planning, and Prime BEEF manager, 62 Civil Engineering Squadron, McChord AFB, Washington. A graduate of Carnegie-Mellon University with a bachelor's degree in architecture, she is a member of the Society of American Military Engineers.*

Scope

The first thing you need to do is find out how big the project is. Bases and their buildings vary in type and size, from a small radar station to a large major command headquarters. Get a copy of the Real Property Listing (RPL) and look through it. Number the buildings if you like to get some idea of how many you have to deal with. Look carefully at a base map and become familiar with it. Drive around the base and pay particular attention to buildings you saw in the RPL and on the base map that you are unfamiliar with. If the base is small or if there are concentrated areas on large bases, walk around, noting position, location, landscaping and proximity to other buildings. The more familiar you make yourself with the base, the easier it will be to recall a building or group of buildings when you are working at your board. It will save having to run out and look, or refer to pictures or slides constantly.

Tools

Once you become familiar with the base, you then need to start thinking about how all of the data you collect will be assembled into a document of some sort. The minimum you will need are

- Base maps with buildings not blackened in so they can be color-coded when printed.
- A Color Schedule which identifies building number, use, square footage of paintable surfaces, finish material, color selected, Federal color number,

Master plan title block used throughout the McChord Master Color Plan.

in-house or contract, last date painted and scheduled for painting. It also helps to break buildings down into three components: base, accent, trim.

• Samples of buildings to be painted.

One can take a front and side elevation drawing of each building and color all the prints for the master copy. This is time consuming and not truly representative of a building. A more accurate representation would be to draw groups of buildings or at least a perspective view of a building. It is not necessary to do all of the buildings; only a sample of types as well as most of the visible buildings on base need to be accomplished. Doing a manually constructed perspective of the necessary buildings was not my idea of fun. One or two buildings would have been okay, but I decided there had to be an easier way. I developed two possibilities, each using the photo lab. The first was to take black and white prints and make a positive film 8 by 10 inch blowup that could either be spliced into a larger sheet or traced over onto a sheet. Splicing the films in seemed the easiest solution, but so many buildings were dark. Their prints would have been hard to represent with color. Tracing the films made sense; you could work with a small format, but you must make sure you have a light table to trace over. Another idea was to take 35mm slides, project them on a wall covered with velum and trace the building(s). I chose the 35mm slide method, and after the first few, it only took 20 to 30 minutes to do any drawing. Although I could only do a few at a time, the total time required for this method was 40 hours. While waiting for eyes to recover, there are lots of data to collect for the schedule.

When you know the average size of the sketches, it's time to decide on a format and size so the schedule can be drawn up. Once the basic schedule sheet has been designed, it can be run off with a reproducible mylar to make the sheets required for the number of the buildings. I used 22 sheets (20 by 28 inch) for my schedule. The mylar saved considerable drafting time. Also, design a title block that can be used throughout the document. I used a 2 inch band across the bottom of the sheet. It was easier to splice in than a square one in the corner.

In addition to all this, I drew a cover sheet with a tracing of the Headquarters building on it, and a Table of Contents/Special Note Sheet. The notes identified all the colors used, special requirements for safety colors, and work still needed to be entered into the schedule on an ongoing basis. Magic markers are usually the quickest, most effective way to color the buildings. I found them in about 140 different colors. Colored pencils are a second choice.

MASTER COLOR PLAN SCHEDULE

FACILITY NO.	BLDG USE	FINISH MAT'L	SQ FT	COLOR COMBO	FED STD NO.	LAST DATE PAINTED
128	Sch. Depn. Intmed	Base: Asb Shingle Accent: Trim: Wood		Lt Green Dk Green	34670 14036	77
132	Educ Cntr	Base: Wood Accent: Wood Trim: Metal	6,680	Lt Blue Med Blue Dk Blue	35526 35164 15044	76
145	HQ MAJCOM MACMET	Base: Asb Shingle Accent: Trim: Wood		SCHEDULED FOR DEMOLITION		
160	AF Clinic	Base: Brick Accent: Stone Trim: Metal		 Dk Green	 14036	
161	Ambulance Shelter	Base: Brick Accent: Trim: Wood/Metal	 200	 Dk Brown	 10032	Summer 73

Color

Most people today realize that color selection is highly subjective and no matter what is selected by one person, another is bound to object to at least one aspect of it. The important thing is to consider your selections carefully. Try to separate your personal opinions of a color and the appropriateness of a color to a particular type of building or part of a building. Thus, your justification for color selection is far more valid than "I liked it."

Sometimes I feel that it's more important that people **not** notice colors of buildings. Chances are, if a color is noticed, it is unpleasant, especially on a military base. People should feel comfortable in their surroundings and if their attention is distracted by something other than what they are paying attention to, something is wrong. I noticed recently that one of the buildings on base was painted a new color. If the whole base had been painted with the same point of view (not color) as that building had been, no one would have noticed. However, the change was a pleasant one, and was noticed, but only for a few weeks.

It seems rather dull to say so, but if you are conservative with your selection of color, especially at a base so well landscaped as McChord AFB, the eyes of the users will be where they belong—on the beautiful surroundings.

I must really thank the McChord AFB people who got involved in this project for not making those nightmares I had about interference into reality. I do not even remotely consider myself an expert on color. I guess I was the closest thing they had to an expert, so I got picked. Some of you may find yourselves in the same position. A clear head and an open mind are the best assets in approaching this kind of problem, not to mention a bit of armor in the event you have more advice offered you than I had! E&S

Community Centers

(*continued from page 25*)

lot as an activity within the community center area. Playgrounds emphasize the total family concept and allow easy visual and physical access. Playgrounds should be designed to the age of the child and his developing abilities. (In other words, the programmer should check out what a particular age child can actually handle before adding or deleting play equipment.) The equipment could be built from natural materials, earth forms, landscaping beams/planks and recycled materials.

Illumination Requirements

Plan pedestrian lighting as independent fixtures highlighting mall activity on the pedestrian scale. Large scale parking lot floodlights or security wash lighting destroy any potential warmth or friendly community atmosphere.

Firefighting Access

Think about and coordinate firefighting access to all community center facilities.

Service Access

Provide acceptable service access to community center facilities. Access routes may serve the dual purpose of a pedestrian mall during customer hours and a service access route during off duty hours.

Future/Proposed Facilities

Study the potential and recommend a realistic community use of uncommitted facilities. The recommendation should then be programmed into the community center plan.

This list should help you get a good start on a new center, or offer ideas on improving an existing center. But, don't forget there is more to Air Force community center planning than designing the space. The project coordinator who forgets the other critical support requirements is liable to find the center empty, unused and in essence, a wasted failure. E&S

ASCE Names Transit System Outstanding

The Washington Metropolitan Transit Authority Metro-rail System, a vital link between the Nation's Capital and its suburbs, has been selected as the Outstanding Civil Engineering Achievement of 1979.

The competition is sponsored by the American Society of Civil Engineers. The top award is given to the project that "demonstrates the greatest engineering skills, and represents the greatest contribution to civil engineering progress and mankind."

From the Inside Out

(*continued from page 17*)

help but foster a continuing climate in which good design has the opportunity to flourish.

Our prime goal in engineering and services is to provide the finest facility that we can, on time and within the money available. We must, therefore, step up our efforts to provide outstanding living and working conditions through cost effective interior design efforts. It should be obvious that the optimum way to meet our Air Force users' needs and maintain a strong, highly efficient and motivated Air Force, is to design our facilities—from the inside out and not vice versa.

DESIGN CONFERENCE

Over 200 architects, engineers and key Air Force leaders participate in four day assembly to develop a growing appreciation of design excellence and to provide a higher quality working and living environment for Air Force people.

An important milestone in the recognition of the impact of quality design of the living environment within the Air Force was achieved last December when the First Air Force Systems Command Design Conference was held at Andrews AFB, Maryland. Over 200 representatives from the Office of the Secretary of Defense, Air Force, Army, other Federal agencies and private industry participated in the four day assembly.

Stressing the theme of "People, Places and Processes," the goal of the Conference was to develop a growing appreciation of design excellence among Air Force architects, engineers and key Air Force leaders and to provide a higher quality working and living environment for Air Force people.

The conference was an eye opener for many of the attendees. For the first time, it provided them the opportunity to evaluate the total Air Force and Federal Design Program and its growing influence on the design of the Air Force living environment. It demonstrated that design goes beyond aesthetics—that basic to the satisfaction and outlook of Air Force people are such factors as how places and spaces are perceived and how Air Force people feel about the spaces in which they live and work.

Air Force leaders were cautioned that they must recognize and appreciate good design, but to achieve it will take careful staffing and architect/engineer selection. They were reminded that the basics to achieving quality architecture in the Air Force include the following:

- Retention of capable architects and receptive program managers;
- Use of outside professional resources; and
- A continuing search for creative and cost effective design.

The conference agenda guided 53 speakers through four daily themes which were Reaching for Design Quality; Improving Our Working and Living Environment; Career Development of the Air Force Architect; and Energy Design and People Projects.

Lt Col Neil R. Greene, conference coordinator, noted that this was the first occasion Air Force design people had the chance to talk to each other without the constraints of an all civil engineering environment. "We can affect the quality of life of those who live on Air Force installations," he said. Regardless of what design technique is employed, "it can delight, win minds, explain things and add an extra dimension of interest to the everyday lives of Air Force people."

Maj Gen William D. Gilbert, Director of Engineering and Services, Headquarters US Air Force, focused his address to the group on the considerations in the design process, that is, that people come first, results count—good design doesn't just happen and there is Air Staff support. "Good design is not a luxury," General Gilbert said, adding "we can afford it.

"Excellence in design is just as appropriate for the Air Force as excellence in any other area of our work. The designer's concern should extend to all parts of the base, the little project as well as the big ones," he said.

In this respect, the General urged the audience to pay as much attention to work proposed for tenant organizations as they do to their own projects. Of special concern were the matters of site selection, quality of site improvements and compatibility of styles and materials.

"The responsibility for design—what our bases and facilities look like and how well they work—is clearly yours, mine and ours," General Gilbert concluded.

Brig Gen Clifton D. Wright, Commander of the Air Force Engineering and Services Center, Tyndall AFB, Florida, and Deputy Director of Engineering and Services, continued the design theme by stressing that the climate has never been better to take advantage of architectural interest and "the need to move ahead with architectural programs now. I am convinced that, in being able to provide a functional, attractive structure, it doesn't cost more to design well than it does to design poorly."

Other speakers emphasized their personal support and the need for quality design and how far the Air Force has succeeded to date. They stressed that good design not only takes good designers but an appreciation of good design by our leaders. They noted that the AFSC Conference was an important milestone in this recognition. *C&S*

NCO of Year
SMSgt Minjarez
Gen Gilbert

Foreman of Year
J.A. Godwin
Gen Gilbert

Maj Gen A.M. Minton Award
Lt Col Stellmach
James Straubel

Meritorious Achievement
Lt Brownell
Gen Gilbert

Meritorious Achievement
L.J. Oliveira
Gen Gilbert

Senior Services Manager
Maj Craig
Gen Gilbert

Services Manager
Capt Gammon
Gen Gilbert

9 Win Coveted Awards

Sine persons were presented with coveted awards for professional excellence in Air Force Engineering and Services during 1978 at Bolling AFB, DC in February. The ceremonies took place during the Air Force Civil Engineering Day Luncheon held in observance of National Engineers Week.

The Luncheon marked the first time in the 17 year history of the occasion that Services career field personnel were honored in recognition of their significant accomplishments. Maj Gen William D. Gilbert, Director of Engineering & Services, Headquarters US Air Force, hosted the gathering which was attended by over 275 people.

Civil Engineering winners were:

- **Non-Commissioned Officer of the Year:** SMSgt Ramon Minjarez, Chief, Production Control Center, 93rd Civil Engineering Squadron, Castle AFB, California.
- **Foreman of the Year:** James A Godwin, Manager, Civil Engineering Resources, 4th Combat Support Group, Seymour-Johnson AFB, North Carolina.
- **Meritorious Achievement for Professional Excellence (civilian):** Louis J. Oliveira, Comprehensive Planner, 2852nd Air Base Group, McClellan AFB, California.
- **Meritorious Achievement for Professional Excellence (military):** 1st Lt Ronald E. Brownell, Chief, Industrial Engineering Branch, 2849th Air Base Group, Hill AFB, Utah.

Services career field winners included:

- **Outstanding Air Force Senior Services Manager:** Maj William R. Craig III, Commander, 18th Services Squadron, Kadena AB, Japan.
- **Outstanding Air Force Services Manager:** Capt Richard Gammon, Chief, Food Service Branch, Directorate of Housing and Services, Headquarters Tactical Air Command, Langley AFB, Virginia.
- **Outstanding Air Force Services Superintendent:** SMSgt James A. Welch, Billeting Manager, 18th Services Squadron, Kadena AB, Japan.
- **Outstanding Air Force Services Technician:** TSgt Randolph J. Koch, Dining Facility Supervisor, 341st Combat Support Group, Malmstrom AFB, Montana.

The Aerospace Education Foundation of the Air Force Association presented its **Maj Gen A.M. Minton Award** to Lt Col Arthur T. Stellmach, Director, Civil Engineering, 12th Missile Warning Group, Thule AB, Greenland.

The award is made each year to the best author of an article published in the **Air Force Engineering & Services Quarterly.** Colonel Stellmach was cited for his article "Techniques for Financial Management" which appeared in the May 1978 issue. Mr. James Straubel, Executive Director of the AFA, made the presentation.

Services Supervisor
SMSgt Welch
Gen Gilbert

Services Technician
TSgt Koch
Gen Gilbert

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